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THE DANGER OF DECOMPOSED PARALDEHYDE

A. L. AGRANAT, M.D. (DUBL.), M.R.C.P. (EDIN.), D.T.M. & H. (RAND)
Senior Physician, Johannesburg General Hospital, Johannesburg
and
W. H. D. TRUBSHAW, F.R.C.S. (ENG.)
Senior Surgeon, Transvaal Memorial Hospital for Children, Johannesburg

Paraldehyde, in the usual dosage, has always been classed as a safe hypnotic, and was extensively prescribed before the barbiturates came into popular use. It is still not infrequently considered valuable in some conditions, such as hepatic insufficiency, delirium tremens, and certain mental diseases.

This sporadic use of paraldehyde may be a factor in its danger; it will deteriorate if allowed 'to stand on the shelf'. Many doctors do not appreciate that 'old' paraldehyde administered to a patient may have serious consequences, and on account of our experience with 3 such cases, as detailed below, we are prompted to remind our colleagues of the possible serious risks involved in the use of 'old' paraldehyde.

DEGENERATION OF PARALDEHYDE

Paraldehyde, when exposed to air and light (or even in the dark), can be oxidized by atmospheric oxygen to acetic acid. Hutchinson[1] drew attention to this in 1930, indicating that oxidation could change paraldehyde to glacial acetic acid. In 1937 Toal,[2] a pharmacist, again drew attention to this possible deterioration, which could occur in the course of a few months, and was more rapid when paraldehyde was stored in a white glass bottle partially containing air, and in the presence of light. Stored in amber glass bottles and kept in the dark, paraldehyde deteriorated less rapidly. The British Pharmacopoeia lays down certain criteria for the purity of this drug, and stipulates that it should be kept in small dark glass bottles which should be kept full, and stored in a dark cool place. Toal[2] examined samples of paraldehyde put up by 7 different chemical manufacturers and found that only one sample did not contain acetic acid after a few months storage.

It is of interest to note that a number of modern and authoritative text-books on forensic medicine make no mention of the possible deterioration of paraldehyde to acetic acid.

It may perhaps appear unlikely that acetic acid would not immediately be recognized by its characteristic odour; but, as both paraldehyde and acetic acid have pungent odours, it is possible that this difference may not be noted in the ordinary routine. In a trial, bottles of paraldehyde and paraldehyde mixed with various strengths of acetic acid were submitted for identification by smell, and it was interesting to note the amount of confusion that arose. This may also help to explain how an accident could occur where paraldehyde is administered to a patient, either orally or rectally, from a bottle which has been 'standing on the shelf' for some time.

An occasional death[3, 4] from this cause has been reported. It is possible that there may have been other accidents which have either not been recognized, or not published. Three cases suffering from the effects of deteriorated paraldehyde were referred to us in recent years, and are recorded as follows:

CASE RECORDS

Case 1 (seen by A.L.A. and W.H.D.T.). A European male, aged 31 years, suffering from status asthmaticus was admitted to a Reef nursing home about 4 years ago. Six drachms of paraldehyde was prescribed, to be administered rectally. Whilst this was being given, the patient complained of a severe burning pain. Within the next few hours the pain in the rectum and lower abdomen became excruciating. The patient was then transferred to a nursing home in Johannesburg where he came under our care. An examination of the rectum revealed extensive caustic burns, and there were signs of an acute abdomen. An immediate laparotomy was performed. This revealed free fluid in the abdomen, and extensive white patches of corrosion with several perforations of the distal half of the large bowel. A colostomy was performed

and drainage was established. Following this, the patient's condition remained critical for about a fortnight, owing to toxic absorption from the sloughing areas in the large bowel, and several severe bowel haemorrhages. Gradual improvement occurred, and he was discharged after 6 weeks. Subsequently a barium enema revealed extensive fibrous contractions of the lower part of the large bowel. He returned to work, remaining in fair health for about 2 years. He then developed intestinal obstruction and, from information received, he was admitted to a Reef hospital, where an operation was performed to relieve the obstruction. Death occurred soon afterwards.

When this patient was originally admitted under our care, it was recognized that he had accidentally sustained a severe caustic burn of the large bowel. His doctor, who was informed of this, took immediate steps to ascertain what had occurred at the nursing home. He discovered that the rectal paraldehyde administered in this case came from a bottle labelled 'paraldehyde' which had been stored for some time. The contents were submitted for analysis and found to contain 67% of acetic acid.

Case 2 (seen by A.L.A.). A European male, aged 54 years, was admitted to a Reef nursing home in status epilepticus, and rectal paraldehyde was ordered by his doctor. He was said to have remained unconscious for 3-4 days. On recovering consciousness, a very persistent diarrhoea was noted. Because the 'dysentery' did not clear up after 5 weeks, he was referred to me by his doctor, and admitted to a nursing home in Johannesburg. It was suspected that this patient was suffering from the caustic effects of degenerated paraldehyde, administered rectally when he was unconscious. This was proved by analysis of the 'old' bottle of paraldehyde, which contained 2/3rds of acetic acid. The patient was treated with sulphonamides and antibiotics, but the 'septic' diarrhoea persisted with an intermittent temperature. About 5 weeks after admission an acute abdomen developed and a laparotomy disclosed a perforation, which was repaired. His condition remained critical for a few days, but he gradually responded to treatment and was discharged from the nursing home about 3 weeks later. It was subsequently ascertained that he made a good recovery and had returned to work since then without any apparent complications. There was, of course, no doubt that this patient suffered a severe caustic burn of the large bowel due to the rectal administration of deteriorated paraldehyde.

Case 3 (seen by W.H.D.T.). In 1947 a female patient was admitted to a Johannesburg nursing home for urological investigation. She was unable to sleep and was ordered paraldehyde *per rectum*. She complained of rectal burning immediately this was administered. During the following 2 weeks she had severe rectal pain and difficulty in having bowel actions. I was asked to see her at this stage. Rectal examination showed oedematous mucosa. An almost complete stricture had developed about 3 inches from the anus. Immediate sigmoid colostomy was performed. About 5 months later, using a posterior approach with removal of the coccyx, the portion of the rectum containing the stricture was excised and an end-to-end anastomosis performed. About a month later the colostomy was closed and the patient's normal bowel continuity was restored.

The paraldehyde used in this case was not analysed, but it smelt and tasted of acetic acid.

CONCLUSION

Although the dangers of deteriorated paraldehyde should be fully appreciated, there should be no objection to the use of fresh paraldehyde, dispensed in the quantity required, or in ampoules. It should, however, be a fixed rule that paraldehyde should never be used when it has been 'standing on the shelf' for any length of time. Any paraldehyde which has been prescribed for an individual patient and not used for him should always be discarded when the patient is discharged.

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SPECIAL SERVICE FOR DOCTERS

A large congregation of nearly 300, including many doctors and nurses from all over the Peninsula, attended a special service for doctors held at St. Stephen's Church, Pinelands, on Sunday, 16 October 1955. The lessons were read by Dr. H. G. Owen-Smith, President-designate of the Cape Western Branch of the Medical Association of South Africa and Professor J. F. Brock, Professor of Medicine at the University of Cape Town. His Grace the Archbishop of Cape Town, the Most Rev. G. H. Clayton, D.D. preached.

In his address the Archbishop said: 'My first words this evening must be words of welcome. I know that in this congregation there are many who have responded to the invitation of the Rector to those who follow the profession of medicine to come and worship together in this church, and I desire on behalf of the Church to welcome you. And I desire also, as in private duty bound, to take this opportunity of making public acknowledgement of the wonderful generosity with which members of your profession treat members of my profession in this country.

'I think it is recognised much more widely than it used to be that it is desirable that there should be close co-operation between physicians and surgeons on the one hand and ministers of religion on the other in their work. It has seemed to me that it might be useful if I were to speak to you about Christianity and Health, and what we ministers of religion are trying to do: for there cannot be effective or useful co-operation unless each side knows what the other is about and what it is trying to do.'

After expounding the view of health and sickness implicit in the teaching and the ministry of Jesus, Dr. Clayton concluded by saying: 'The skill and science of the physicians and surgeons come from God. But I believe that those who exercise these gifts recognize themselves that the success or failure of what they do depends often upon incalculable elements connected with human personality. The most important factor in recovery from illness is peace of mind. One of the greatest hindrances is worry. The great remedy for that is faith in God; faith such as Christ taught and showed. That faith is the result of the reconciliation with God which Christ made possible. The spirit of implicit trust whereby we cry "Abba, Father". That faith with which ministers of Christ try to inspire the sufferer, that by God's grace he may be able to say: "Was my gloom after all the shadow of His hand outstretched caressingly?"

'We can help our partners in the other ship, namely the medical profession, in their work. We know well enough the great strain on bodily and spiritual strength to which doctors and nurses are exposed. We can do something for them by our prayers. But we can also assure them from our own experience that there is strength sufficient for their needs and ours in our Lord Jesus Christ. So we may ever increasingly rejoice in happy co-operation.'

BOOKS RECEIVED : BOEKE ONTVANG

Text-Book of Orthopaedic Medicine. Volume I Diagnosis of Soft Tissue Lesions. By James Cyriax, M.D., B.Ch. (Cantab.) Pp. 692+xiv with 128 illustrations. 45s. London: Cassell and Company, Ltd. 1954.

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VAN DIE REDAKSIE

ALGEMENE PRAKTYK IN DIE LEERPLAN

Vyftig jaar gelede was dit nog moontlik vir die algemene praktisyn om die soort geneeskunde wat hy aan sy opleidingshospitaal geleer het, te praktiseer. In die laaste jare word die algemene praktisyn se werk meer en meer oorgeneem deur spesialiste wat elk 'n deskundige is op gebied van 'n besondere aspek van mediese behandeling.

Maar ten spyte van die spesialiste se inbreuk op sy werk, is die algemene praktisyn nog altyd in 'n besondere posisie om sy pasiënte te help, al is sy verantwoordelikhede en funksies besig om te verander. Hy is nie meer 'n mediese allemarkteman nie; hy besef langsamerhand dat daar tog sekere aspekte van mediese behandeling is waarin hy 'n ‚spesialis' en deskundige is. Hy behoort *ex officio* 'n lid van die gesin en hul deskundige raadgewer oor gesondheidsaangeleenthede te wees. Sy kennis van die indiwidue en die gesin as geheel stel hom in staat om die kliniese openbarings van wanaanpassing te verstaan, hetsy hulle van liggaamlike, emosionele of sosiale aard is—of 'n samestelling van al drie. Danksy sy strategiese posisie kan die algemene praktisyn vir elke pasiënt die geskikste en aanneemlikste behandeling voorskryf, selfs al moet hy in die loop van sy werk ander artse of agente gebruik. Ook het die algemene praktisyn die beste kanse om die ontwikkeling en groei van die kinders in die gesin dop te hou, en dus kan hy die vroegste tekens van siekte bespeur. Dit is sý verantwoordelikheid om akute noodgevalle te behandel, en om te besluit of en wanneer hy die hulp van ander geneeshere moet inroep. Dit is hy wat moet sorg vir die pasiënt wat kronies siek is, vir die neurotiese, die afgeleefde en die sterwende pasiënt, en—nog meer belangrik—vir hul families. As huisdokter behoort hy die gesin te kan bedien met raad omtrent algemene gesondheidsaangeleenthede. Al hierdie take verrig hy teen die pasiënt se eie lewensagtergrond, helpende om die indiwidu te lei of om sy omgewing te verbeter.

Meer en meer manne van ons beroep meen dat ons, deurdat ons amper uitsluitlik staatmaak op spesialiteitonderrig in die opleidingshospitale, 'n baie belangrike aspek van geneeskunde afskeep, nl. die toepassing van akademiese geneeskunde op die werklike toestande buitekant die hospitale.

In die laaste jare besef mediese skole al hoe meer hoe nodig dit is om hul studente in algemene geneeskunde op te lei. In 1953 is dit gerapporteer dat 9 uit 28 mediese

EDITORIAL

GENERAL PRACTICE IN THE CURRICULUM

Fifty years ago it was still possible for the general practitioner to practise the sort of medicine he was taught in his teaching hospital. In recent years more and more of the G.P.'s functions have been taken over by specialists, each one of whom is an expert in dealing with one facet of medical care.

Yet despite the inroads of the specialists into his work, the G.P. remains in a unique position to help his patients even though his responsibilities and functions are changing. Less and less a medical jack-of-all-trades, he is slowly recognizing that there remain certain aspects of medical care in which he is a 'specialist' and an expert. Ideally the G.P. is an *ex officio* member of the family and its expert adviser on health matters. Through his knowledge of the individuals and the family as a whole he is well prepared for an understanding of the clinical manifestations of maladjustment, whether these be physical, emotional or social, or combinations of these types. For each patient the G.P. is in a strategic position to prescribe the most appropriate and acceptable therapy, even though he may have to use consultants or other agencies in the process. The G.P. also has the best opportunities for observing the development and growth of children in the family and seeing the earliest signs of disease. It is his responsibility to deal with the acute emergencies, and to decide if and when he should enlist the assistance of others. He must cope, too, with the chronically ill, the neurotic, the aged, and the dying patient, and, most important, their families. Through his position in the family he should be able to advise on health matters generally. In all these activities he is acting in the environment in which the patient lives, helping to guide the individual or modify his surroundings, or both.

A growing number of the profession feel that by relying almost entirely on specialist teaching in the teaching hospital, we are neglecting a very important aspect of medical practice, namely the application of academic medicine in the real world outside of the hospitals.

skole in Groot-Brittanje en Ierland gereëlde kursusse in die algemene praktyk voorsien; 12 hou nou en dan lesings; 2 het spesiale leerkragte vir onderrig in algemene geneeskunde; 10 het reëlings getref vir hul studente om algemene praktisyns te besoek, en 6 was besig om opleiding in algemene praktyk te beplan. By slegs 1 was daar geen skema in werking of voorgenome nie. In die Verenigde State bied 54 uit 79 mediese skole in 1951 een of meer programme aan wat ontwerp is om studente in algemene geneeskunde te onderrig.[2]

In Suid-Afrika is 'n soortgelyke ontwikkeling te bespeur. Elliott[3] beskryf die Alexandra-gesondheidsentrum en Universiteitskliniek in Johannesburg waar studente vir 2½ weke inwoon en aansienlike verantwoordelikheid dra vir die behandeling van pasiënte. Gale[4] beskryf die plan van die Durbanse Mediese Skool om 'n Departement van Gesinspraktyk te stig, gebaseer op die *Institute of Family and Community Life*, wat persoonlike voorbehoedings- en geneeskundige gesondheidsdienste beoog. In samewerking met die Algemene Praktisynsgroep van die Noord-Transvaalse Tak van die Mediese Vereniging, het die Mediese Fakulteit van die Universiteit Pretoria[5] onlangs 'n plan ontwerp waaronder mediese studente in hul laaste studiejaar by algemene praktisyns van die Tak geplaas sal word. Die skema neem in aanvang in 1956. Aan die Universiteit Kaapstad het mediese studente op eie houtjie gedurende die afgelope 12 jaar studenteklinieke gestig waar hulle onder toesig kliniekdienste voorsien vir buitepasiënte uit subekonomiese groepe. In 1954 het studente van hierdie universiteit voorgestel dat 'n Algemene Praktisyns-Leerlingskema ontwerp word.

Die Mediese Vereniging van Suid-Afrika, en in besonder sy Algemene Praktisynsgroep, is oortuig daarvan dat spesiale opleiding, van toepassing op die behoeftes van algemene praktisyns, in die leerplan van mediese studente ingesluit moet word, en ook dat nagraadse onderrig tot die beskikking van praktiserende huisdokters gestel moet word.

Hierdie saak het die ernstige aandag van die Suid-Afrikaanse Mediese en Tandheelkundige Raad geniet, wat die mening uitgespreek het dat die fasiliteite vir nagraadse studie onvoldoende is. Die Raad het die Minister van Gesondheid hieroor genader, maar hy wou nie die Regering verbind aan subsidies vir nagraadse studiekursusse nie. Die Raad het met die universiteite hieroor beraadslaag, en die saak is nog onder bespreking.[7]

Hoewel die meeste mense dit eens is dat opleiding in algemene geneeskunde meer aandag behoort te geniet, is daar tog sekere vrae wat nog beantwoord moet word. Is dit wenslik dat spesiale opleidingspraktyke vir algemene geneeskunde gestig moet word? Sou die ‚leerling'-stelsel, onder leiding van algemene praktisyns, aan sy doel beantwoord? Is die klinieke en gesondheidsentra wat slegs die lae-inkomstegroepe bedien geskik vir opleidingsdoeleindes? Is kombinasies van verskillende soorte praktiese werk doenlik? Slegs ondervinding sal die antwoorde lewer, maar intussen is dit aanmoedigend dat die behoefte aan opleiding in algemene praktyk en nagraadse studiekursusse gevoel en erken word. Is dit te veel om te verwag dat die erkenning van hierdie behoeftes die ongesonde neiging om algemene praktyk

In recent years medical schools are to an increasing extent recognizing the need for teaching general practice to their students. In 1953 it was reported[1] that of 28 medical schools in Great Britain and Ireland 9 provided regular courses in general practice, 12 arranged occasional lectures, 2 had special general-practitioner teaching units, 10 arranged for their students to visit G.Ps, and 6 were planning general-practitioner teaching. Only 1 had no scheme, actual or planned. In the United States 54 out of 79 medical schools in 1951 sponsored one or more programmes designed for the purpose of preparing students in general practice[2].

In South Africa a similar trend is discernible. Elliott[3] described the Alexandra Health Centre and University Clinic in Johannesburg, where students live in for 2½ weeks and take considerable responsibility for treating patients. Gale[4] outlined the plan of the Durban Medical School to establish a Department of Family Practice based on the Institute of Family and Community Health, which combines preventive and curative personal health services. The Medical Faculty of the University of Pretoria, in collaboration with the General Practitioner Section of the Northern Transvaal Branch of the Medical Association[5], have recently outlined a scheme whereby final-year students will be 'farmed out' to G.Ps. of the Branch for a month at a time, beginning in 1956. At the University of Cape Town medical students on their own initiative have over the last 12 years started a number of Students' Clinics where they, under supervision, provide out-patient clinical services to sub-economic groups; in 1954 students[6] from this university proposed a General Practitioner Apprenticeship Scheme.

The Medical Association of South Africa, and particularly its General Practitioners' Group, is convinced not only that special training appropriate to the needs of general practitioners should be included in the curriculum of medical students, but also that postgraduate instruction should be made available to practising family doctors.

The question has received serious attention from the South African Medical and Dental Council, which has recorded its opinion that the facilities for postgraduate training are inadequate. It has approached the Minister of Health on the subject, who, however, declined to commit the Government to subsidize postgraduate training courses. The Council has conferred with the universities on the subject, which is still under consideration by the Council[7].

While there is general agreement that more attention should be given to instruction in general practice, several questions still remain to be answered. Is it advisable to establish special teaching general practices? Is apprenticeship to G.Ps. sufficient? Are Clinics and Health Centres which serve only low-income groups satisfactory for teaching purposes? Are combinations of different types of practical work feasible? Experience alone will give the answers, but meanwhile it is gratifying that the need for teaching general practice to our undergraduates and providing postgraduate courses for general practitioners is recognized and accepted. Is

as minder belangrik as spesialiteitpraktyk te beskou, sal teenwerk?

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it too much to hope that such recognition will counter the unwholesome tendency to regard general practice as being on a lower level than specialist practice?

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BILATERAL TOTAL ADRENALECTOMY FOR ADVANCED CANCER OF THE BREAST

PERCY HELMAN, M.B., Ch.B. (CAPE TOWN), F.R.C.S. (ENG.)

Surgeon, Cape Town. Formerly Resident Surgical Officer, Royal Cancer Hospital, and Registrar, Hammersmith Postgraduate Hospital, London

Since the advent of cortisone the operation of bilateral adrenalectomy has become a practical procedure and is being performed in ever increasing numbers for advanced hormone-dependent growths. Huggins[1] actually carried out the operation before cortisone became available and it resulted in the post-operative deaths of his 4 patients, who were all suffering from carcinoma of the prostate. Since then, many reports have appeared in the literature reviewing the results of this operation in the treatment of advanced breast and prostate carcinoma. In the treatment of carcinoma of the breast, the most notable contributions have been the following: those of Huggins and Bergenstal[2]—8 patients, West *et al.*[3]—6 patients, Taylor *et al.*[4]—18 patients, Krieger *et al.*[5]—3 patients, Huggins and Dao[6]—100 patients, Pyrah and Smiddy[7]—22 patients, Galante[8]—31 patients, Cade[9]—46 patients, and Greening and Harmer[10]—20 patients.

This report is based on the follow-up of 30 patients suffering from advanced carcinoma of the breast treated by bilateral total adrenalectomy. The patients were under the care of Professor Ian Aird, at the Hammersmith Postgraduate Hospital, and Mr. W. P. Greening, at the Royal Cancer (Marsden) Hospital. To Professor Aird, and Mr. Greening I am indebted for allowing me to see their patients and review the case-sheets.

RATIONALE

The concept of 'hormone-dependent cancer' is firmly established and accepted. Hadfield[11] defines it as follows: 'When some human breast-cancers have come into being, their continued existence depends to an uncertain degree and for an uncertain time upon a continuous supply of one or more sex hormones'. It has been shown conclusively that the rate of growth of breast cancer can be modified by the application of hormone therapy. Beatson,[12] Alexis Thompson[13] and Sir Hugh Lett[14] showed the beneficial effect of bilateral oophorectomy. Experimental evidence was also forthcoming following the classical work of Lacassagne[15] and Foulds.[16, 17] Lacassagne showed that the administration of oestrogen increased the incidence of growth in mice which were characterized by a low percentage of mammary cancer and in strains of male mice in which the tumour never developed spontaneously. Foulds described actively-growing mammary cancer during pregnancy in hybrid mice, in some of which the growth regressed after parturition and later disappeared—only to reappear with further pregnancy and parturition. As early as 1916 Loeb[18, 19] showed that in certain strains of mice, oophorectomy delayed (though it did not always prevent) the development of mammary cancer. Herrell,[20] reviewing a group of nearly 3,000 women, found that in the cancer-bearing group the incidence of complete oophorectomy or castration before carcinoma was diagnosed was 1·5%, whereas the incidence of castration in the non-cancer group was approximately 10 times higher, the inference being that castration may play a part in delaying or preventing the onset of hormone-dependent carcinomata. Gardner *et al.*[21] have shown that with injection of oestrogen 15% of certain mice acquired lymphomata. The lymphoma-inducing action was inhibited by testosterone propionate. Many workers feel that prolonged oestrogen therapy may be a factor in the production of mammary cancer.

A relationship between the gonads and adrenals has been known for many years. Cramer and Horning[22] have shown that excessive amounts of oestrogen may protect the animal against loss of the essential adrenal hormone. The carcinogenic property of prolonged oestrogen administration may be weakened in the absense of the adrenal glands. Furthermore, if the gonads of certain mice are removed at an early age, adrenal tumours develop.[23] In rats adrenalectomy has been shown to retard the growth of transplantable carcinoma and lymphosarcoma.[24] Shimkin and Wyman[25] found adrenalectomy to reduce the incidence of mammary tumour as fully as oophorectomy.

The commonest age-group of carcinoma of the breast is 45-60 years—years which include the menopause. The incidence of the disease rises sharply just

before the menopause, and is then interrupted (especially in the unmarried female) by a significant decline during the menopausal years. The upward trend is not resumed until the immediate postmenopausal period.[26] This same interruption has been shown to correlate with decreased incidence of skeletal secondaries.[27] One gets the impression that the cancer assumes a less 'virulent' character during the menopausal years. It is assumed (though not proved) that the premenopausal cancer is in some way associated with ovarian oestrogen—that the menopausal regression is due to the decline in ovarian oestrogen. The later rise in incidence or persistence of the disease is due to adrenal take-over of oestrogen production. There is experimental evidence to show that postmenopausal women do produce endogenous oestrogen, whose probable source is the adrenal cortex.[11]

THE OPERATION

The best-known approach to the adrenals is *via* the loin and through the bed of the 12th rib.[28, 29, 9, 10] Both adrenals may be removed at one stage or preferably, as is now performed, in two stages, with an interval of about 14 days. The ovaries are removed with one adrenal at the first stage and the other adrenal is removed at the second sitting. Professor Aird has performed the operation in one stage *via* the transperitoneal route.[30] In the series now under report, 22 patients were subjected to two-stage adrenalectomy through the loin and the remaining 8 to one-stage adrenalectomy *via* the anterior route.

Pre-operative and post-operative Care

At the Hammersmith Postgraduate Hospital substitution therapy (based on the regime employed by Huggins[2, 6] and Pyrah and Smiddy[7]) was practised as follows:

	Cortisone Acetate	*DOCA*	*Salt*
Day before operation ..	50 mg. i.m. 6-hourly	—	3 g.
Day of operation	150 mg. orally 1 hour before operation, and 50 mg. 4 hourly	5 mg. i.m.	—
1st post-operative day ..	50 mg. i.m. 6-hourly	5 mg. i.m.	3 g.
2nd-6th post-operative day ..	50 mg. orally 12-hourly	3 mg. i.m.	3 g.
6th day onwards	25 mg. orally 12-hourly	—	3 g.

i.m. = intramuscular

DOCA is to be used with care in people with oedema and early congestive cardiac failure.[8]

The patients are usually maintained on 25-75 mg. of cortisone daily. The salt intake should be at least 3g. per day. Thyroid extract seems to enhance the action of cortisone.

A noradrenaline infusion should be readily available (4 mg. per 1,000 ml. dextrose and saline), and may well be a life-saving remedy if the blood pressure should fall away during the immediate post-operative period. In one of the patients, the noradrenaline drip, probably owing to subcutaneous leakage, resulted in skin ulceration, which was severe enough to warrant skin grafting. More recently intravenous hydrocortisone has become available and may be used to counteract the adrenal crises.[31]

Because of serious hormonal imbalance and the possibility of collapse, constant attendance on the patient is essential, and a regular chart should be kept of the patient's general condition, pulse rate, blood pressure, intake and output, to say nothing of timely therapy. Experience has shown that team-work brings forth the most satisfying results. The surgeon, anaesthetist, physician, biochemist, and nursing staff need to cooperate all the time and it is their constant association which will help to throw more light on this fascinating experiment.

Involvement of Adrenals by Growth

The adrenals were involved by growth in about a third of the patients. In Sir Stanford Cade's series[9] they were involved in 55% of the cases. Involvement of the adrenals could often be suspected because of their grittiness and the infiltration of the surrounding structures, a feature which made their removal much more difficult. On the other hand their atrophic appearance was no criterion of freedom from disease. The most innocent-looking adrenal or ovary may be markedly infiltrated by cancer. A nodule of growth can sometimes be seen in the medulla, rather than in the cortex (Fig. 1). Huggins[32] and Cade[9] comment on the location of the secondaries in the medulla rather than in the cortex. Their histological appearances are said to resemble the parent growth. Fig. 2 shows infiltration of the gland—a more cellular invasion on the right and a scirrhous infiltration on the right.

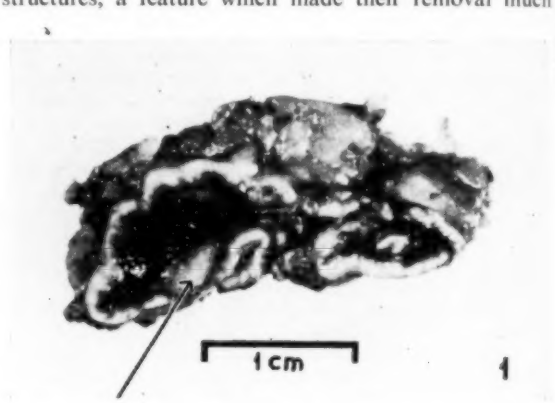

Fig. 1. Cut section of the adrenal gland. Note the deposit in the medulla on the left.

Assessment and Follow-up

All 30 patients were suffering from carcinoma of the breast with extensive skeletal or pulmonary metastases. They were all female and their ages varied from 36 to

72 years. Some of them had severe skin ulceration in the mastectomy scar, and in a few the advanced primary lesion was still present. All the patients had received some form of irradiation and hormone therapy. They were all seriously ill and either rapidly or slowly going downhill. For all of them there was no other form of treatment. Almost all demanded that something should be done as life was miserable and rapidly becoming intolerable. The statistical results in the 30 cases (as shown in (Fig. 3) are as follows:

Died from the operation or within a few days, 6.
Objective improvement, 6. One has since relapsed.
Subjective improvement, 14. Mainly relief of pain and improved general health, but no regression of the secondaries. Four have since died and 1 has relapsed.
Unchanged or made worse, 4. Three have died within 2 months.

CASE RECORDS

The following are summaries taken from the case sheets of 6 patients in whom there was subjective or objective improvement after bilateral adrenalectomy:

Case 10. L.A., aged 45 years. Marked generalized secondary deposits were noted 4 years after radical mastectomy for stage-I growth. In spite of treatment with X-rays and testosterone, her general condition deteriorated and pain became intolerable. She became dyspnoeic because of pulmonary deposits. Bilateral

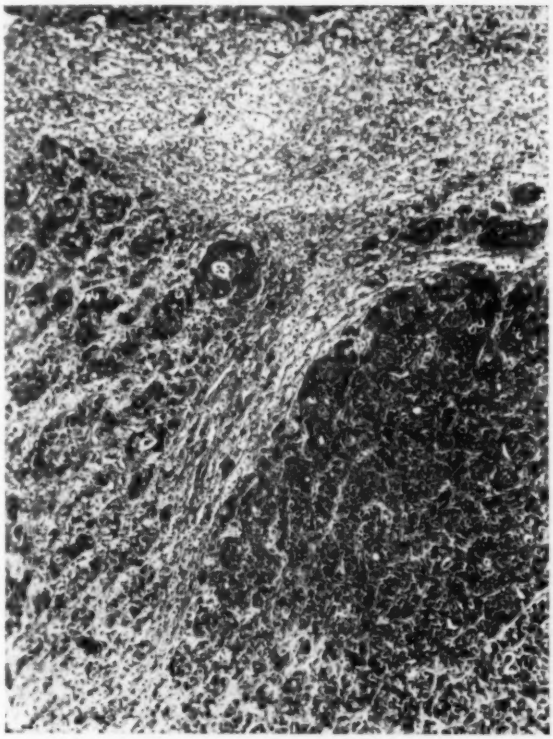

Fig. 2. Histological section of the adrenal gland. Note the cellular invasion on the right and the more scirrhous infiltration on the left.

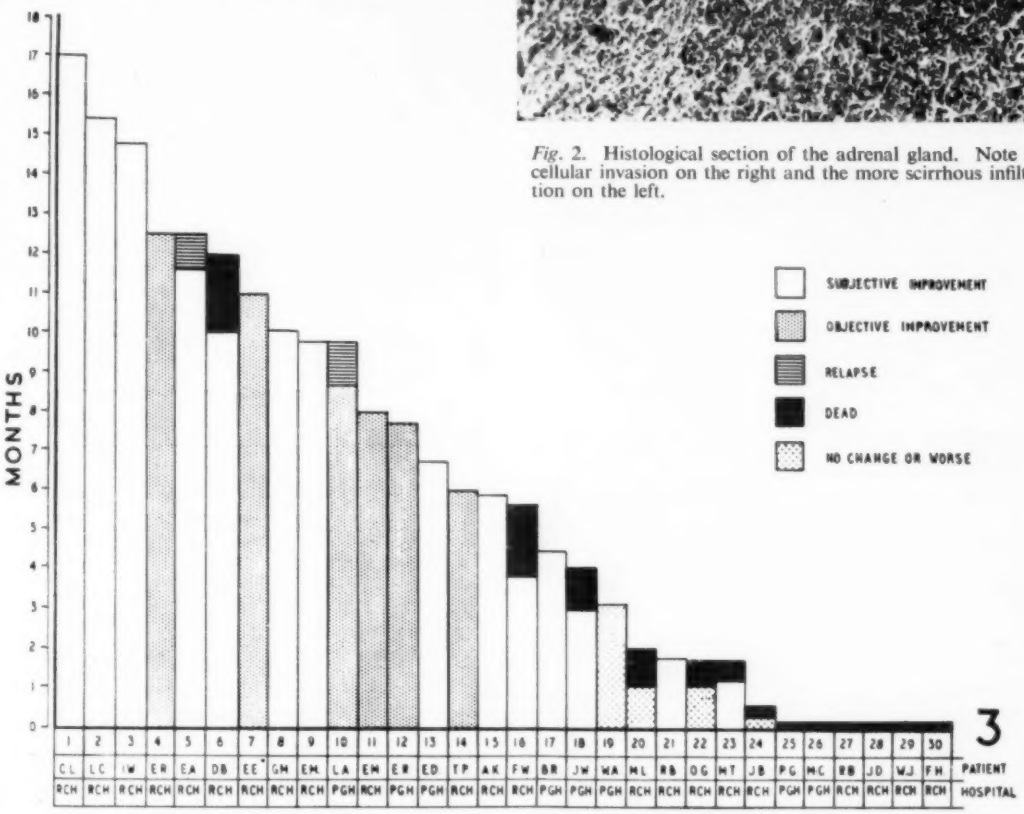

Fig. 3. Follow-up of 30 patients subjected to bilateral adrenalectomy for advanced mammary cancer.

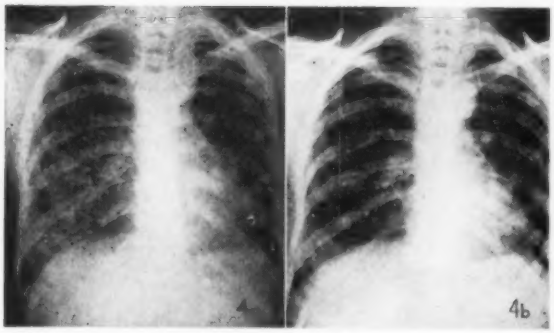

Fig. 4. Pulmonary metastases from breast carcinoma.
(*a*) Before adrenalectomy.
(*b*) Two months after adrenalectomy.

adrenalectomy and oophorectomy resulted in dramatic relief of pain. From being bed-ridden, she later resumed her household duties. Fig. 4 shows the partial clearance of the lung secondaries 2 months after adrenalectomy. She remained symptom-free for about 8 months, and even gained weight, but then suffered a severe

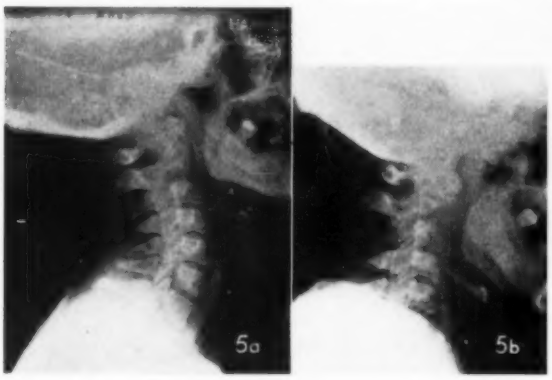

Fig. 5. X-ray of the cervical spine.
(*a*) Before adrenalectomy.
(*b*) Nearly 4 months after adrenalectomy. Note the destruction of the 2nd and 3rd cervical vertebra.

relapse accompanied by severe generalized bone pain. Fig. 5 shows the state of the cervical spine just before and nearly 4 months after operation. In spite of apparent well-being the disease progressed markedly in the upper cervical vertebrae.

Case 12. E.R., aged 61 years. Generalized skeletal deposits developed some years after radical mastectomy. The secondaries were most marked in the skull, spine and pelvis. Adrenalectomy and oophorectomy resulted in marked relief of pain with obvious regression of the skull deposits (Fig. 6). There was also some radiological improvement in the state of the pelvis. Nine months after operation she is ambulant and cheerful and grateful in spite of persistent widespread metastases.

Case 13. E.D., aged 57 years. This lady had a radical mastectomy 10 years ago. Two years ago pelvic deposits became obvious and then a pathological fracture developed of the upper third of the right femur. Radiotherapy temporarily eased the bone pain. Hormone therapy had some initial effect. Adrenalectomy almost miraculously relieved her of the pain. The fracture, however, showed no sign of healing and 3 months later it was treated by open operation by the insertion of a Kuntscher nail. In spite

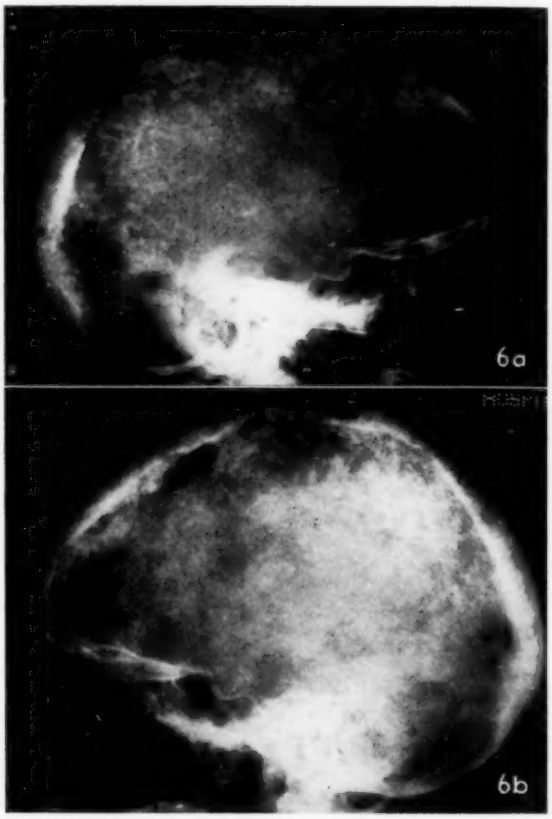

Fig. 6. Diffuse osteolytic deposits in the skull.
(*a*) Before adrenalectomy.
(*b*) Note the sclerosis of the deposits 8 months after adrenalectomy.

of some extension of the disease in the pelvis and femora, she is ambulant (with the aid of crutches) and pain-free 7 months later. The patient has gained a fair amount of weight, is eating well and has become somewhat euphoric. This latter state may be due to cortisone therapy.

Case 14. T.P., aged 59 years. Admitted with a fixed ulcerating growth of the right breast. Some months previously this ulcer had partially responded to irradiation and oestrogen therapy, but for the last 6 months had steadily increased in size. After adrenalectomy the growth rapidly diminished in size and 4 months later had healed to an almost miraculous degree (Fig. 7). She has maintained this progress for over 6 months.

Case 1. C.L., aged 50 years. After radical mastectomy in August 1952, secondary deposits became obvious in the lumbar spine and lung early in 1953. Adrenalectomy in October 1953 was followed by marked improvement in general health, appetite and weight. She is now ambulant and can do her own shopping, when before the operation she was unable to walk. She has maintained the improvement for 17 months.

Case 7. E.E., aged 52 years. Underwent left radical mastectomy 10 years ago. Skeletal secondaries became obvious in 1953. She developed proptosis of the left eye due to retro-orbital deposits resulting in diplopia. Choroidal metastases were also noted. Adrenalectomy and oophorectomy was performed in June 1954,

Fig. 7. Ulceration of the right breast.
(*a*) Before adrenalectomy.
(*b*) Note the healing 4 months after adrenalectomy.

and was followed by gradual regression of the proptosis and choroidal metastases (Fig. 8). She has remained quite well for nearly a year, the pain also being much easier.

Fig. 8. (*a*) Proptosis of the left eye due to retro-orbital deposits.
(*b*) Regression of the lesion 6 months after adrenalectomy. Note the change in facial appearance.

DISCUSSION AND CONCLUSIONS

The operation is indicated in those patients who have widespread metastases, and in whom *all other* known forms of treatment have failed to elicit a response. At the same time it must be stressed that only those patients who are a reasonable operative risk should be subjected to this operation, which is a severe one and cannot salvage dying or unconscious sufferers. These unfortunate victims are beyond the scope of adrenalectomy.

All authorities are agreed that the results are better when adrenalectomy is combined with oophorectomy. This series tends to confirm that impression.

After adrenalectomy about 25% of patients are not only subjectively improved, but actually show improvement in the appearance of the primary or secondary growths. In this series a few patients showed 'healing' of secondaries in the skull and pelvic bones. Another feature is that radiological improvement of one bone may be associated with progression of the disease elsewhere in the skeleton. Improved X-ray appearances of the skull may be associated with recovery of cranial nerve palsies, proptosis and diplopia.

Regression of pulmonary lesions has been noted.[9, 10] Some authorities have records of patients showing complete resolution of a large solitary metastases in the mediastinum with concomitant relief of dyspnoea. Pleural effusions have been known to diminish in amount.[32]

Another dramatic response to adrenalectomy has been the healing effect it has on the large ulcerating and foul-smelling carcinomas of the breast and chest wall. Similarly, recurrent growths in the mastectomy scar may regress in a very short time, sometimes even within 3 months. This feature has impressed me as the outstanding effect of adrenalectomy.

One gains the impression that the operation has little, if any, beneficial effect on the secondaries within the peritoneal cavity, particularly liver secondaries. These patients, one feels, seem to do rather badly after adrenalectomy.

About 50% of patients are improved subjectively. The operation results in complete or partial relief of pain with improved general health, increased appetite and a gain in weight, unassociated with any visible healing of the secondaries. In fact, the disease may actually progress in spite of apparent well-being. The gain in weight may be due to water retention from overdosage with cortisone. Some patients may become euphoric, also a likely cortisone effect.

About 10% of patients are unchanged or made worse by the operation.

It is becoming increasingly clear that the beneficial effects of adrenalectomy are usually of a temporary nature. Many patients, even those who do remarkably well to start with, seem to relapse after a period of time. The disease may become active within 6-12 months of operation, though there are reports of patients maintaining good health for periods up to 3 years,[6] and nearly 2 years.[9] Mr. Greening's patient is well 17 months after operation.

Huggins's experience [6] has led him to postulate some factors which may influence the prognosis. He believes that the best results are obtained in patients between the ages of 40 and 65. Patients under 40 years seem to do badly. The prognosis was also worse in those in whom the secondaries arose within one year of the treatment of the primary condition. As for histological specification, he found better response in those patients with an adenocarcinoma as opposed to an intra-duct or anaplastic carcinoma. Cade [9] has stated that all histological types may respond favourably. Huggins [32] also believes

that female patients with high oestrogen output in the urine respond more favourably.

Is there an explanation for the poor results and recurrences? A great drawback is the fact that there is no way of predicting the response to the operation. The response to previous treatment with hormones and the histological patterns do not always help in deciding whether the operation will prove beneficial. Why the results vary so tremendously is still a mystery.

The presence of accessory adrenal tissue has been known for more than 2 centuries.[33] More recently Graham [34] has shown the presence of adrenal rests in 32 out of 100 consecutive autopsies. They were located around the coeliac plexus and coeliac artery. Accessory adrenal tissue has also been described in the broad ligament, peri-adrenal fat, transverse mesocolon, epididymis and testis, and along the course of the gonadal vessels.[33] In the peri-adrenal fat they may be mistaken for a lymph node. These rests are able to undergo hyperplasia with the production of endocrinal dyscrasias when the adrenals are removed. It has also been known for adrenalectomized patients *not* to need replacement therapy and for the urine to contain abnormal amounts of oestrogen. It seems an attractive postulate therefore, that persistence or hypertrophy of adrenal rests may be a factor in the production of the poor results or recurrences after the operation.

Another interesting feature of this disease is that there appear to be two types of mammary cancer, viz. the oestrogen-dependent type and the non-oestrogen-dependent type.[35] It has been shown that changes occur in the urinary calcium in some patients with bone deposits following oophorectomy, stilboestrol therapy, and adrenalectomy. Lowered calcium excretion has been known to occur with prompt relief of symptoms.[5,3] Arising out of this it may be that calcium excretion studies could be a practical guide to determine the response to adrenalectomy.

SUMMARY

1. A report is presented on the follow-up of 30 patients suffering from advanced cancer of the breast treated by bilateral adrenalectomy.

2. The object of the operation is to eradicate a source of oestrogen production.

3. The pre-operative and post-operative care is briefly described.

4. The effect of adrenalectomy and oophorectomy on the general condition, pain, local changes and metastases is presented.

5. Of the 30 patients, 6 died from the operation or within a few days, 4 were unchanged or made worse, 14 showed subjective improvement and 6 showed objective improvement. The temporary nature of the improvement in some patients was stressed.

6. A great drawback to this form of treatment is that there is no sure way of predicting the response to the operation.

I wish to thank Professors Ian Aird, Ch.M., F.R.C.S. and Mr. W. P. Greening, F.R.C.S. for their advice and helpful criticism. The photographs were prepared at the Photographic Departments of the Royal Cancer and Hammersmith Postgraduate Hospitals, London.

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EDIBLE LEAVES

The Union Department of Nutrition, Private Bag 170, Pretoria, has issued the following information showing the nutritive value of vegetable tops, which are commonly thrown away.

Beet tops contain per weight 4 times as much calcium and iron as the beet itself, while carrot tops are approximately 10 times richer than the carrot in these nutrients. The difference in the vitamin content is even more marked. Beetroot contains hardly any vitamin A, but the leaves are so rich that one helping of cooked leaves provides 3 times the daily requirement of the body. This also holds true for turnip leaves in comparison to the turnip itself.

Vegetable leaves and tops are also rich in vitamin C. Beet leaves contain 6 times as much vitamin C as the root and one helping will provide the daily requirement. Turnip leaves are 5 times as rich as the turnip and a helping contains far more than is needed daily. As for carrots, the tops contain 30 times as much of this vitamin as the root.

The Bantu have long been aware of the fact that it is wholesome to eat the green leaves of plants. In the rural areas they make use of a large variety of wild plants; while they are not available to the city dweller he can make use of many tame leaves for vegetable dishes, stews and soup.

Apart from beet, turnip and carrot tops, there are the leaves of pumpkin, sweet potatoes, celery and lucerne—and if there are many weeds in the garden, pigweed is sure to be among them. All these leaves are tasty—much tastier than spinach.

Carrot and lucerne tops are preferably used in small quantities in soup only, as too much is apt to give a bitter flavour to the dish.

THE PULMONARY ASPECTS OF FIBROCYSTIC DISEASE OF THE PANCREAS

A REVIEW OF THE LITERATURE AND A CASE REPORT

D. K. QUINLAN, M.B., B.CH., L.M.

Krugersdorp Hospital

In recent years much has been written about fibrocystic disease of the pancreas. In this article stress is laid on the pulmonary disease associated with this condition.

Fibrocystic disease of the pancreas is a congenital and familial disease of unknown etiology, affecting about 25% of siblings in affected families.[1] It is characterized by impaired function of the exocrine portion of the pancreas. There is an absence or gross deficiency of secretion of digestive juices by the acini, with consequent poor digestion and utilization of proteins, carbohydrate, fat and fat soluble vitamins.

The characteristic clinical features are early age of onset, failure to gain weight on a normal diet, excellent appetite, large foul-smelling stools, and a degree of chronic bronchitis, broncho-pneumonia and often bronchiectasis.

It is the diagnosis of the disease and not the disease itself that is unusual. Only in 1 in 4 cases is a suspicion of the correct diagnosis aroused before death, by clinical and X-ray findings.[2]

Pathological Anatomy and Physiological Pathology

The acini and small ducts of the pancreas show various degrees of dilatation and the lumina are filled with an inspissated material. Frequently the dilatation is so marked that the appearance is that of a cystic structure. There is considerable fibrosis between the ducts and acini. Sometimes there is a slight infiltration of lymphocytes. The islets of Langerhans remain normal and their function is unimpaired. A few instances have been reported where there has been atresia of the ducts of Wirsung and Santorini. The important thing from a clinical point of view is that almost the whole of the pancreas is affected with such severe damage to the acini that normal secretion of the enzymes is impossible.

Approximately 20-65% of the dietary protein is passed in the faeces, as is 20-60% of the dietary fat, resulting in the loss of 25-40% of dietary calories and essential fat-soluble vitamins.[3] There is always vitamin-A deficiency, often resulting in bilateral corneal ulcers and xerophthalmia. Serum calcium and phosphate levels are normal. Some cases have shown haemorrhagic tendencies with prolongation of prothrombin time.

Sugars, requiring no pancreatic digestion, are well tolerated and utilized.

Faecal loss of minerals is excessive except in the very young or premature infants, where anaemia is uncommon.

PULMONARY ASPECTS

Clinical Picture

Pathological lesions always occur in the lungs.[1] They develop early in the course of the disease in many cases and are ultimately present in some degree in all patients. The pathological process in the lungs progresses slowly but steadily, and is the usual cause of death.

A harsh unproductive cough, often paroxysmal and sometimes confused with pertussis, is present. Such a cough associated with altered faeces should suggest that there may be fibrosis of the pancreas and enable one to make a diagnosis early in the disease. It is a common error to attribute the malnutrition, cough and diarrhoea to a pulmonary lesion alone, as though it were a chronic pulmonary infection causing a disturbance of nutrition.

On physical examination no signs of gross consolidation in the lungs are found, since the process is an interstitial one. It is revealed by coarse, sticky rales and and 'asthmatic' type of breath sounds due to obstruction of the bronchioles with exudate and fibrosis. Wheezing, dyspnoea and cyanosis are conspicuous as the process advances.

The pathological changes in the lungs may become so extensive and severe that embarrassment of the heart supervenes from increased resistance to the pulmonary circulation, giving rise to clinical signs of cor pulmonale.

An aid in clinical diagnosis is given by the finding of corneal ulcers or xerophthalmia with bronchiectasis in a young infant.

Macroscopic and Microscopic Appearances of the Lungs

Some enlargement occurs in the hilar lymph nodes. The lungs are voluminous, with alternating areas of atelectasis and emphysema.

Section shows chronic bronchitis, which is more pronounced in the medium-sized intra-pulmonary bronchi. The bronchial walls are greatly thickened with fibrotic tissue, and extensive lymphocytic infiltration is present. The peri-bronchial lymph-nodes are enlarged. In many instances the bronchial lumina show diffuse tubular bronchiectasis. An acute suppurative process is superimposed on the chronic bronchitis, and the bronchial tree is often filled with thick viscous mucopurulent material which is found in the large, medium and small bronchi. The lungs show obstructive emphysema, sometimes with scattered abscesses or small areas of atelectasis. The lung lesions are bilateral and involve all the lobes. Occasionally there may be suppurative pleurisy or pyo-pneumothorax. *Staphylococcus aureus* is the organism usually predominantly concerned, in association with other organisms.

Etiology

The etiological relationship of chronic bronchitis and suppurative bronchitis to fibrocystic disease of the pancreas is not clear. The respiratory involvement may be associated with a generally lowered resistance to infection in these malnourished infants, but the uni-

formity of the infection in clinical course, pathology and bacteriology is striking and indicates a specific relationship to pancreatic deficiency.

The non-absorption of vitamin A gives rise to bilateral corneal ulcers and chronic bronchopneumia, going on to progressive bilateral bronchiectasis. Vitamin A is closely associated with fat absorption, and if fat is left unabsorbed in the intestine vitamin A remains with it. Workers have found low vitamin-A readings in fibrocystic disease of the pancreas and by means of prolonged treatment have been able to bring serum levels to normal.[1] There is a close correlation between serum lipides and vitamin A, and when the former are low even the parenteral administration of vitamin A may not be effective, because of ineffective transportation.

The tendency to bronchopneumonia and bronchiectasis is most probably explained by changes in the bronchial epithelium caused by deficiency in vitamin A, and pulmonary infection secondary to squamous metaplasia of the bronchial epithelium. With the pulmonary lesions there is often associated otitis media and infection of the paranasal sinuses.

X-ray Appearances of the Pulmonary Lesions

Attwood and Sargent[2] give an account of the pulmonary X-ray changes which occur in fibrocystic disease of the pancreas, and are suggestive in diagnosis.

Purulent bronchitis, with bronchiectasis, bronchiectatic abscesses and secondary pneumonitis, occur with other conditions, and there X-ray indications alone cannot be considered as definitely diagnostic; but certain X-ray features occur so constantly in fibrocystic disease of the pancreas that they enable a possible or even a definite diagnosis of the condition to be made. Some of the characteristic X-ray changes are the following:

(*a*) *Distribution and character of the pulmonary lesions.* Since the fundamental cause of the pulmonary lesions appears to be a systemic factor, possibly vitamin-A deficiency, and some of its effect is primarily on the bronchial epithelium, it may be expected that the pulmonary changes will be diffuse, involving all of the lobes of both lungs, especially the hilum, with decreasing intensity towards the periphery of the lobes (Fig. 1).

(*b*) *Chronicity of the pulmonary lesions.* If repeated X-rays are taken the chronicity of the pulmonary lesions is a striking feature and may lead to an erroneous diagnosis of pulmonary tuberculosis (Figs. 1 and 2).

(*c*) *Atelectasis.* In view of the pathological process that involves the bronchi, which become filled with a purulent, tenacious exudate, it is not surprising that a proportion of cases show atelectasis of the lungs (Fig. 2).

(*d*) *Bronchiectasis.* If lipiodol X-rays were done in all cases of fibrocystic disease of the pancreas, bronchiectasis would be found to be a marked feature. Bronchiectatic lung changes are not well shown on straight X-rays. All young bronchiectatic patients should be studied for fibrocystic disease of the pancreas (Fig. 2).

(*e*) *Evidence of abnormal intestinal motility.* In some cases air and even fluid may be seen in the abdomen, shown by dilated loops of small bowel. Such intestinal gas shadows must of course be interpreted with extreme caution, but in the presence of definite pulmonary findings they may be an additional factor pointing to the possibility of fibrocystic disease of the pancreas (Fig. 1).

(*f*) *Age of the patient.* If the above pulmonary changes occur in patients of the age-group 2 months to 2 years they are more likely to be associated with fibrocystic disease of the pancreas.

TREATMENT

The treatment of the pulmonary complications must go together with the general treatment of the disease. The child must have a well-balanced, high-calorie and high-vitamin diet sufficient to satisfy its appetite, which may be considerable.

Protein is poorly absorbed but well tolerated. Patients need about twice the basic requirement—in young infants 10-12 g. per kg. of body weight per day.

Fat and carbohydrates. A low-fat diet is required, care being taken, however, to give food substances which are fat-soluble, to facilitate the absorption of vitamin A, D and K. To provide enough calories, a correspondingly high intake of carbohydrates is needed.

Vitamins. 20,000-40,000 units of vitamin A should be given per day. This vitamin is poorly absorbed after intramuscular injection, which is prone to cause abscess formation. If the prothrombin time is prolonged vitamin K is given parentally. Additionally vitamin-B complex and vitamin C should be given.

Pancreatin is useful, especially in marasmic infants, in whom it greatly improves the utilization of food.

Treatment of the Pulmonary Condition

There is a close relationship between the nutritional state and pulmonary condition, which is proved by the fact that pulmonary complications seldom occur in cases where the nutritional state is treated before the onset of chronic cough. Dietary therapy after the onset of respiratory-tract infection decreases mortality and prolongs life, but where pulmonary infection is well advanced diet alone does not help.

Chemotherapy and Antibiotics

Sulphadiazine. The combination of dietary therapy and control of fresh respiratory infections with sulphadiazine is responsible for the survival of a great number of patients. Sulphadiazine is even preferred to penicillin for prompt control of intercurrent infection due to the streptococcus and pneumococcus.[5] The prophylactic use of sulphadiazine is especially effective in doses of 0·5 g. twice daily (varied according to age) in the winter months to all patients who have a cough, and to those who have received penicillin and other antibiotics for the treatment of severe symptoms within recent months, whether they are coughing or not. It is necessary to ascertain the tolerance to the drug by several leucocyte counts at bi-weekly and, later, monthly intervals. Patients who are free from cough for many months do not receive the drug regularly but are provided with a small supply and advised that on the first appearance of a fresh infection it must be started at once and the physician notified. Sulphadiazine is of great value in the prophylaxis and treatment of a recently-acquired infection of the upper respiratory tract, but has little

effect on chronic bronchitis. It is usually not effective after the appearance of cyanosis, which marks the terminal phase of the disease.

Penicillin, parental and aerosol. There is variability in the sensitivity of the causative organisms to penicillin. Large doses over short periods give the best results. Parental treatment alone is not satisfactory but the results are better if higher local concentration can be obtained, because infection is localized primarily in the thickened and poorly-vascularized walls of the chronically-infected medium and smaller bronchi. The method is as follows[5]: The open end of a de Vilbis standard nebulizer is inserted directly through an oxygen mask of soft rubber to the lips of the patient. One c.c. of isotonic solution of sodium chloride containing the required amount of penicillin is placed in the nebulizer and a stream of oxygen is permitted to flow at the rate of 6 litres per minute. The duration of the treatments is 8-12 minutes. An anaesthetic re-breathing bag is connected to the mask in order to utilize some of the penicillin in the expired air. All the openings of the mask are plugged. This method is well tolerated by children over 18 months of age, but is not practical under the age of 1 year. 20,000 units of penicillin are used for each treatment and 7 treatments are given per day, i.e. 3-hourly with the exception of one omission during the night to give a 6-hour rest period. No toxicity or sensitivity has been noted. Distilled water should not be used as the solvent because it is irritating to the respiratory mucous membrane, while normal saline is not. The modern trend is to use the newer antibiotics such as aureomycin and terramycin prophylactically for long periods and also in the acute phase of the pulmonary disease.

Prognosis

The prognosis has been vastly improved by chemotherapy and antibiotic therapy, but it is still poor in those who acquire respiratory infections in the first 2-3 months of life. If respiratory infection is not acquired until after 6 months of age, and in those who are given dietary therapy before the onset of pulmonary infection, response to therapy is usually favourable.

CASE REPORT

D.J.S., a baby girl 4 lb 12 oz at birth, normally delivered at home; the 3rd child of a normal mother and father; brother 6 years old and sister 4 years, both normal.

Was first seen at the age of 3½ months with a history that she was breast-fed from birth and was doing well until 2 months of age. She then failed to gain weight, which was thought to be due to under-feeding. The breast-feeding was then changed to 'cows milk and Mead's', and a gain in weight occurred. Stools at this time were apparently normal for the most part, but at times green in colour, and an occasional large stool was passed. There was only an occasional cough present at this time.

Physical examination revealed a wasted female child weighing 6 lb, very delicate-looking and irritable, coughing persistently. No abnormalities were found in the head and neck. Cardiovascular system normal. No gross physical signs in the lungs. No marked clinical anaemia. Slight protrusion of the abdomen,

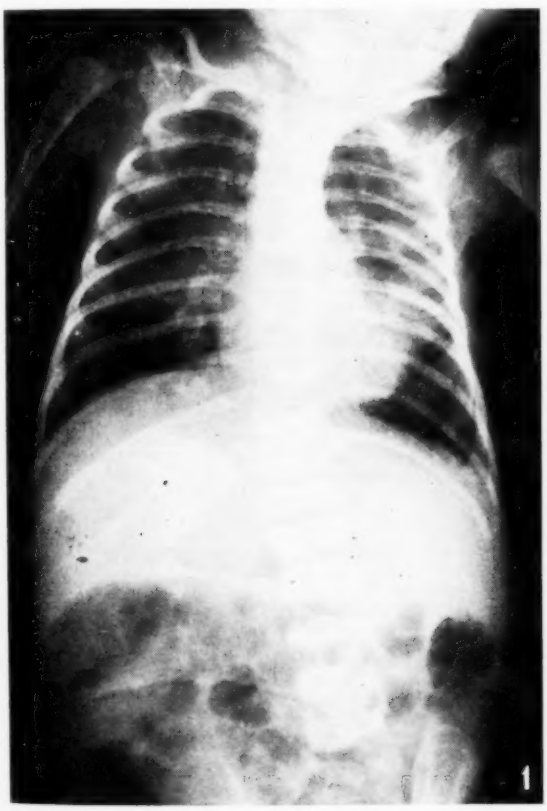

Fig. 1. Note increased striations throughout both lung fields, more marked in the hilar regions, decreasing in intensity towards the periphery of the lobes. Note air in bowel.

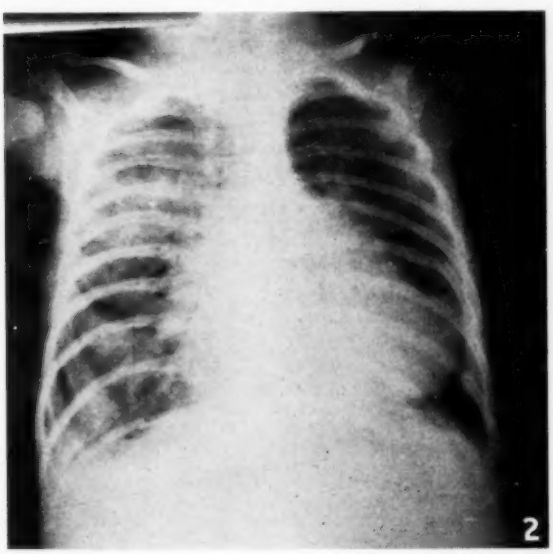

Fig. 2. Note the areas of atelectasis and bronchiectasis, especially in right lung, and enlargement of heart, suggesting cor pulmonale.

but no enlargement of the liver or spleen and no abnormal masses felt. Central nervous system normal. Urine clinically normal.

Special Investigations

Mantoux 1/1000 and 1/500 negative.

Blood examination: haemoglobin 10·3 g.%; colour index 0·98; erythrocytes 3,400,000 per c.mm.; leucocytes 6,300 per c.mm. (neutrophils 36%, monocytes 5%, lymphocytes 56·5%, eosinophils 2·5%).

Microscopic examination of a centrifuged specimen of urine showed the presence of approximately 6 polymorphonuclears per high-power microscopic field, together with bacteria and amorphous phosphates. Cultivation yielded an abundant growth of coliform bacilli.

Parasitological examination of stool revealed no infestation. Microscopic examination of a cream-coloured stool of semi-solid consistency showed some fat-globules and a fair number of digested starch-granules. No fatty-acid crystals, fat plaques or undigested meat-fibres were observed. The specimen contained 73% water; of the total solids 22% was fat and of the fat 15% was unsplit. The weight of a 72-hour specimen was 105 g.

The modified Ide test was negative.

Examination of the gastric juice by direct method and by the biological test was negative for tubercle bacilli.

Trypsin was absent from the stool and gelatine was not digested in the 1/5, 1/10, 1/20, and 1/40 dilutions. Examination of the duodenal juice also showed that trypsin was absent and gelatine was not digested in the 1/5 dilution.

X-ray examinations are shown in Figs. 1 and 2.

Throat swabs at this time gave an abundant growth of Friedlander's bacillus on cultivation, showing no sensitivity to 'sulphatriad' streptomycin, aureomycin, terramycin, or erythromycin, but marked sensitivity to chloromycetin.

Fibrocystic disease of the pancreas was diagnosed and dietary and antibiotic treatment instituted. In spite of this the child continued with the characteristic cough and the general condition regressed, with no increase in weight. At this stage the child got rapidly worse and died with typical signs of cor pulmonale.

Histologically the pancreas showed the changes typical of fibrocystic disease. Sections of the lungs showed the presence of infected bronchiolitis and bronchiectasis.

A female baby weighing 7 lb was born to the same parents 18 months after this patient died; it was perfectly healthy and at 6 months of age weighed 16 lb. and was doing well.

SUMMARY

A case of fibrocystic disease of the pancreas is reported, and the literature is reviewed with special reference to the pulmonary aspect of the disease and treatment by diet, chemotherapy and antibiotics.

My thanks are due to Dr. A. V. Opperman, Medical Superintendant of the Krugersdorp Hospital, for permission to publish this case, to Dr. J. L. Parnell, Paediatrician in charge of the Paediatric Department, Krugersdorp Hospital, for his help and encouragement, and to Dr. M. Hellman, Radiologist, Krugersdorp Hospital, for the X-rays.

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40TH SOUTH AFRICAN MEDICAL CONGRESS HELD AT PRETORIA, 16-22 OCTOBER, 1955

The 40th South African Medical Congress, held in Pretoria from 16 to 22 October, was a really great success from every point of view. The members attending exceeded 620 in number and they were accompanied by nearly 500 wives and friends whose attendance was registered. More than 150 papers were presented, many of them of considerable merit and some of great importance. About one-half of the papers were duplicated and made available to members before the day when they were read. The Trades Exhibition, always an important feature of Congress, was of great and varied interest.

The background was of the pleasantest. Pretoria was *en fête* on account of its centenary celebrations. Streets were decorated and illuminated. The beautiful gardens which abound in this town presented a wonderful show and the jacaranda trees, for which Pretoria is renowned, were beginning their annual pageantry. The University buildings provided commodious accommodation for the Congress meetings, and exhibitions. The University is two or three miles from the centre of the city, where most of the members were staying, and an excellent transport service was provided by the Pretoria ladies, to whom Congress members were greatly indebted.

Their Excellencies the Governor-General and Mrs. Jansen, who have now graciously consented to become Patron and Patroness of the Medical Association of South Africa, actively participated in the Congress. They had invited members of Congress to a garden party at Government House which, however, could not be held because of inclement weather; but members were well compensated by the viceregal reception in the rooms of Government House itself, which took its place. The presence of their Excellencies added lustre also to the Congress Banquet, which was held in the main City Hall. The handsome room, the floral decorations, and the music played by the band of the South African Police (Director, Captain L. P. Bradley, L.R.A.M.) provided a beautiful setting for a memorable occasion. Amongst the guests was the Mayor of Bonn, Dr. Peter Busen, who was visiting Pretoria for the centenary.

The Congress was inaugurated on the Sunday by a well-attended church service in the City Hall conducted by the Bishop of Pretoria (Rt. Rev. R. S. Taylor) and Rev. Dr. Ben Marais. This was followed by the popular lecture by Mr. H. J. B. Atkins, D.M., M.Ch., F.R.C.S., of Guy's Hospital, London, which was greatly appreciated by a large audience.

The formal opening of Congress and the Presidential Reception took place on the Monday, also in the City Hall.

SCIENTIFIC PROGRAMME

The scientific proceedings were distinguished by the presence of a number of well-known doctors from overseas, who made important contributions to the plenary sessions and sectional meetings. They included Prof. Alexander Haeblow of the Chester Beatty Research Institute, Royal Cancer Hospital, London; Dr. Ralston Paterson and Dr. Edith Paterson of the Christie Hospital and Holt Radium Institute, Manchester; Prof. Bryan McFarland of Liverpool University; Mr. H. J. B. Atkins of Guy's Hospital, London; and Professor Confortini of Genoa, who demonstrated the Battezzati-Taddei 'artificial kidney'; as well as Dr. Candau, Director-General of the World Health Organization, who delivered an address on the work of WHO in 1955.

The details and time-table of the plenary sessions and sessional meetings have already been published in the *Journal*. The two plenary sessions, which were devoted to the subject of cancer, were largely dominated by the addresses of the visitors from overseas, but important papers were also contributed by South African colleagues. These plenary sessions were attended by very large audiences of members.

By reason of the increasing number of papers submitted at successive congresses, the proportion that can be listened to by any individual attending congress becomes progressively less.

OTHER FUNCTIONS

The other Congress fixtures, of which a list has been published in the *Journal*, were most successfully carried through. The Trades

Exhibition was, as usual, a central feature of Congress, and was full of interest to members, as were the Exhibition of Doctors' Hobbies and the Scientific Exhibition.

There was an excellent programme of social and sporting events, and a much appreciated series of entertainments for ladies attending Congress.

An excellent Congress Brochure was published, which included printed precis of two-thirds of the papers on the programme.

The Pretoria doctors are to be congratulated on the great success of the Congress, and particularly the chairman (Dr. J. H. Struthers, who was also President of Congress, as well as President of the Association), the hon. organizing secretaries (Drs. C. M. Grundlingh and W. Waks), the hon. medical secretaries (Dr. F. Ziady and J. G. du Toit), the hon. treasurer (Dr. W. A. Lombard) and the other members of the Congress committee and subcommittees. The thanks of members are also due to the ladies' committee, who provided transport, teas every morning and afternoon throughout Congress, and many other amenities.

ANNUAL MEETING OF MEDICAL ASSOCIATION OF SOUTH AFRICA

The Annual Meeting of the Association was held at the New Chemistry Theatre, University of Pretoria, at 12 noon on 17 October 1955. The outgoing President, Dr. L. E. Lane, presided.

The Annual Report of the Chairman of Federal Council, which had been published in the *Journal*, was moved by Dr. A. W. S. Sichel and adopted.

The audited accounts of the Association and the Benevolent Fund, which had also been published in the *Journal*, were moved by the Honorary Treasurer, Dr. J. S. du Toit, and adopted. Discussion took place on the present limitation of the amount that may be disbursed annually from the Benevolent Fund.

Messrs. Gurney, Notcutt and Fisher were reappointed auditors.

Dr. Lane, after thanking members on behalf of himself, his wife and his Branch for the signal honour done him and the trust placed in him by election to the high office of President, inducted the new President, Dr. J. H. Struthers. Dr. Lane said that Dr. Struthers was well tried in the service of the Association and well worthy of the position. He referred to the many positions in the Association that Dr. Struthers had held.

Dr. Sichel, in proposing a vote of thanks to Dr. Lane, which was adopted with acclamation, said that no President in recent years had fulfilled the duties of the office more efficiently.

The meeting was then adjourned until the evening.

At 8.15 p.m. on 17 October the adjourned Annual Meeting and the Opening Ceremony of Congress took place in the Pretoria City Hall, Dr. J. H. Struthers, President of the Medical Association of South Africa, presiding.

His Worship the Mayor of Pretoria, Dr. H. Muller, delivered an address of welcome to members of Congress.

The Minister of Health, the Hon. J. F. Naudé, also delivered a speech in declaring the Congress open.

For distinguished service to the medical profession the Association's Gold Medal was awarded to the late Dr. Karl Bremer (received by Mrs. Bremer) and to Dr. L. I. Braun, and the Association's Bronze Medal to Dr. D. P. Marais, Prof. S. F. Oosthuizen and Prof. L. J. te Groen. The certificate of Emeritus Membership was awarded to Dr. J. H. Harvey Pirie, and the certificate of honorary membership to Dr. R. V. Bird and Miss C. Nothard.

The Hamilton-Maynard Memorial Medal for 1954 was awarded to Dr. A. P. Blignault and the Leipoldt Memorial Medal for 1954 to Dr. I. M. Hurwitz.

Dr. Struthers presented Dr. Lane with the Past President's Medallion, and Mrs. Lane presented Mrs. Struthers with the insignia of President's wife.

Dr. Struthers then delivered the Presidential Address (reported in the last issue of the *Journal*, 1955, **29**, 1001).

During this meeting Prof. Gerrit Bonn performed on the organ.

The meeting was followed by the Presidential Reception which was held in an adjoining room of the Town Hall.

THE MAYOR'S WELCOME TO CONGRESS

In his address of welcome to the Congress, His Worship the Mayor of Pretoria, Dr. H. Muller, said:

It is indeed a great pleasure for me to welcome to Pretoria so many eminent medical doctors and their good ladies, not only from all over South Africa, but also from our neighbouring territories and from countries across the seas.

We in Pretoria are just now celebrating our city's 100th birthday, and we have been indulging in some reflections on the past. We have been looking back into the growth of our country as a whole and of this city of ours in particular, and in doing this we have examined many of the facets which have gone into its development. Not the least of this has been the improvement in the health of the people and the development of our health services, for which we are all so deeply indebted to you, our doctors.

Progress in Public Health. The change in the expectation of life is one of the best examples of the progress that has been made. In South Africa, at the beginning of this century, the average expectation of life was about 44 years, and today the average is about 64 for men and 68 for women—an increase of about 20 years for men and about 24 years for women.

If we look at the infantile mortality figures for Europeans, we find that at the beginning of this century we lost over 100 children in the first year of their lives for every 1,000 children born. This figure, in this comparatively short period of time, has dropped from 100 to 32. This alone accounts for the saving of thousands of lives of children yearly. This is a most important achievement, because we, with our small European population, are striving hard to build up a white South African nation, and what better material can we have than children who have been born and brought up on South African soil with our own traditions and cultural background.

Apart from this we know that the infantile mortality rate figure is the barometer of the health of a nation, and our low infantile mortality figure compares favourably with any other place in the world. Such dreaded diseases as tuberculosis, typhoid fever, pneumonia and even leprosy have been or are now being brought under control and are much more easily curable with the new drugs which have been discovered.

Diseases like smallpox, yellow fever and diphtheria are almost completely preventable through immunization. Incidentally, it is a great pity that in South Africa not more use is made of immunization against diphtheria. We are losing hundreds of children's lives through neglect of parents to have their children protected against this dangerous illness.

From all these improvements and for all the alleviation of pain and suffering we, the public of South Africa, are indebted to members of your profession. The progress has, however, been so gradual, so unspectacular and so 'abstract' that very few people are even aware of it. Perhaps you are to be blamed yourselves for not publicizing these achievements sufficiently. Aren't you perhaps a little too reticent and conservative?

There are of course illnesses like cancer and heart disease which doctors have not yet been able to combat effectively and which are taking a very heavy toll of life. May you soon find the answer here too!

Die Pretoriase Mediese Fakulteit. Die stryd om 'n antwoord te vind op baie mediese probleme word ook steeds in Suid-Afrika gevoer. Daar is talle liggame en organisasies wat op die strydtoneel 'n aktiewe en belangrike rol speel. Van hulle het ons een hier in Pretoria wat ek vandag graag spesifiek wil noem. Dit is die Mediese Fakulteit van ons eie universiteit.

Dit is die jongste van al die mediese fakulteite in Suid-Afrika

en het maar betreklik onlangs tot stand gekom. Tog word my vertel dat daar uiters waardevolle navorsingwerk gedoen word, en dat daar al etlike prestasies behaal is. Ek hoop dat binne 'n afsienbare tyd die Mediese Fakulteit van Pretoria ook sy deel sal bydra tot die internasionale bekendheid wat Pretoria op ander gebiede alreeds verwerf het, soos bv. in die geval van Onderstepoort en ook deur die werk van wyle dr. Robert Broome.

Dood deur Menslike Gewelddadigheid. In hierdie stryd om die genesing van die liggaam te verseker en om die menslike liggaam steeds gesond te hou, moet ons egter ook nie die mens se siel vergeet nie, omdat baie van u probleme hul oorsprong het by die mens se geesteshouding.

Neem byvoorbeeld die geval van padongelukke. In Suid-Afrika alleen was daar tussen 1951 en 1954, d.w.s. oor 'n periode van 4 jaar, nie minder as 243,577 padongelukke nie, met 4,972 sterfgevalle. Ons hou die onbenydenswaardige rekord van een van die hoogste padongeluksyfers in die wêreld. Baie van hierdie ongelukke is te wyte aan blote onverskilligheid en selfsug.

Terwyl u almal besig was om lewens te red was die mensdom ook verantwoordelik vir twee van die groot wêreldoorloë.

In die 1914-1918 oorlog was daar in die Britse Ryk alleen nie minder as 1,089,919 sterfgevalle en 2,400,988 ongevalle nie. En dit was die oorlog om alle oorloë te beëindig. Binne 'n tydperk van 20 jaar is die hele wêreld egter weer in die bloedigste worsteling gedompel waar die gevegsfront deur die woonbuurtes van byna al die stede in Europa geloop het en waar miljoene op die slagveld gedood is, asook baie miljoene burgerlike mans, vroue en kinders, en om geen ander rede as die vrees en haat wat die mens vir sy medemens het nie.

Daar is geen lewende skepsel wat dieselfde gevoelsdiepte het en wat tot dieselfde liefde en goedheid as die menslike wese in staat is nie, en tog is daar geen lewende dier wat soveel wreedheid en haat aan die dag kan lê en van wie dit bekend is dat hy met opset soveel van sy eie soort doodmaak nie. Hierdie stryd is byna onverklaarbaar. Die mens, op sigself, of in 'n klein groepie, is die goedhartigste van alle skepsels, maar as hy deel van 'n menigte of 'n groot groep word, word hy onbeheerbaar in sy wreedheid en selfsug. Dit lyk asof daar vir hierdie afwyking geen genesing is nie. Miskien sal iemand eendag 'n middel ontdek en indien wel, sal ons 'n geneesmiddel hê vir hierdie kwaal, die kwaaiste siekte waaraan die mens blootgestel is.

U Kongres is een van die belangrikstes wat in die Eeufeesjaar in Pretoria plaasvind. Ek hoop dat u beraadslagings met sukses bekroon sal word en dat al die Kongresgangers en hulle gades 'n aangename verblyf in ons stad sal hê.

MINISTER DECLARES THE CONGRESS OPEN

The Minister of Health, the Hon. J. F. Naudé, in his speech declaring the Congress open, said:

Dit sal natuurlik van my verwag word dat ek my toespraak in albei ons offisiële tale sal lewer, wat ek ook van plan is om te doen —net soos ek hoop die besprekings hier op u Kongres ook in albei tale gevoer sal word. Daar is geen verskoning vir ons wat feitlik daagliks met albei dele van ons bevolking in aanraking kom, om nie ons plig in dié opsig te kan doen nie, vernaamlik waar dit alreeds in 1910 bepaal was dat albei tale erkenning in ons land sal geniet. Ek hoop dit sal my nie kwalik geneem word as ek die gedagte uitspreek dat dit selfs baie wenslik, indien nie noodsaaklik nie, is vir dokters om nog 'n derde taal, nl. een van die Bantoetale, magtig te wees om op die wyse behoorlike diens aan ons Bantoebevolking te kan lewer. Dit is vernaamlik nodig vir ons medici op die platteland wat gereeld met ons naturelle daar in aanraking kom, want die naturel het reeds en word daagliks meer bewus van die goeie dienste wat in ons hospitale en deur ons dokters aan hom gelewer word.

Die feit dat die mediese kongresse altyd so goed bygewoon word, is genoegsame bewys van die hoë waarde van so 'n kongres. Die groot aantal referate wat hier gelewer gaan word en die breë veld wat daarmee gedek word, waarborg 'n ryke beloning vir u opoffering om hier aanwesig te wees. Die doel van so 'n kongres is nie net om vriendskapsbande te hernu, nuwe kollegas te leer ken of miskien 'n welverdiende rus te geniet nie, maar veral om kennis te put uit die ryke ervaring van ander kollegas en om 'n breër agtergrond op te doen wat tot persoonlike verryking van kennis en uitbreiding van belangstelling in die mediese wetenskap as geheel aanleiding sal gee.

Onder die groot aantal medici wat hier aanwesig is, is een groep oor wie ek graag 'n paar woorde wil sê, nl. die algemene praktisyns. Daar bestaan 'n toenemende neiging onder die medici vandag om in een of ander rigting te spesialiseer. Hierdie neiging het ongetwyfeld sy voordele omdat die mediese wetenskap tot so 'n mate uitgebrei het dat dit meer as 'n leeftyd sal vereis om op alle gebiede volkome op hoogte van sake te kom en te bly. Dit is dus goed dat ons op elke afsonderlike gebied deskundiges het wat volkome meesters op hul gebied is. Daarenteen het hierdie neiging ook sy nadele. Daar bestaan wesenlike gevaar dat die aantal spesialiste uiteindelik geheel-en-al buite verhouding tot die aantal algemene praktisyns sal styg en hulle genoodsaak sal wees om hulle in die stede te vestig waar daar dan 'n oortollige getal sal wees. Aan die ander kant, met ons groot en uitgestrekte land wat nog maar in vergelyking dun bevolk is, is dit 'n noodsaaklike vereiste dat goed opgeleide dokters met algemene mediese kennis hulle op die platteland sal vestig. Daar bestaan gevaar dat ons hier 'n tekort aan medici sal hê wat sekerlik betreurenswaardig sal wees.

Die Huisdokter. Ons land kan nie toelaat dat die ou huisdokter van vroeër verdwyn nie. Hy was nie net geneesheer nie maar ook raadgewer en huisvriend. Hy was by uitstek in staat om nie net die siekte te behandel nie, maar ook om die gesondes in die gesin gesond te hou. Deur hierdie vriendskaplike toenadering was hy dikwels in staat om siektetekens waar te neem miskien nog voor die pasiënt daarvan bewus was. Hy was in staat om ongewenste toestande in die huis van die pasiënt te sien en aanbevelings vir verbeterings te maak. Met ander woorde, hy was ook die kampvegter vir volksgesondheid in die breë sin van die woord. Hy moet in alle opsigte as die gelyke van sy spesialiste-kollegas in die samelewing beskou en aanvaar word. Dit kan alleen deur die geneesheer self bewerkstellig word. Sy mediese kennis moet grondig wees, sy gedrag moet onder alle omstandighede onberispelik wees, sy benadering tot sy pasiënte moet taktvol en simpatiek wees. Die etiese beginsels van sy professie moet onwrikbaar gehandhaaf word. Hierdie vereistes geld natuurlik ook vir die spesialiste.

Postgraduate Education. Contemporary historians have stated that the progress of medical science during the past 50 years is one of the most spectacular achievements of western culture and that it has led to some of the most fundamentally beneficial advances mankind has yet made. The tremendous increase in average life-expectancy, at present about 66 years for Europeans in South Africa, is a good measure of the rapid strides made. More fields of potential assistance to the patient are continually being introduced with a mass of detailed knowledge about them expounded in literally thousands of medical journals appearing annually. This rapid extension of knowledge and of facilities implies that the reasonable competency which a sick public naturally expects of a professional man be continually improved upon. It has therefore, even more than in the past, become incumbent upon the medical man, whether he be in general or specialist practice, to extend himself in this regard. You may feel somewhat dyspnoeic in the effort, have become disturbed and perturbed at the sudden spurt required of all, yet it remains a professional obligation fitted also to the old ethical one of *noblesse oblige*.

I understand that the universities are assisting in this regard by making available short-term refresher courses as well as temporary assistantships. The high standard which you set yourselves and your colleagues will, I am sure, act as a spur to make use of these facilities and if necessary to request for extended assistance. It follows that it is our bounden duty to promote the welfare of the universities as time-honoured and natural institutions of learning and teaching and as your training centres, in order that they may follow their primary function to educate and advance knowledge. So may the partnership of learning and of practice become of mutual benefit and your honourable profession maintain its vitality and progressiveness.

Geneeshere in die Staatsdiens. Dit is miskien nie onvanpas om op hierdie stadium ook 'n bietjie propaganda vir my eie Departe-

ment te maak nie. Die rede is daar dat op die oomblik 80 vakante mediese poste is. Ongetwyfeld sal sommige beweer dat hierdie toedrag van sake aan 'n te lae besoldiging toegeskryf moet word. Die volgende feite moet egter oorweeg word wanneer die saak benader word. Hoewel die aanvangsalaris miskien nie besonder aantreklik voorkom nie, is daar ander voordele wat in gedagte gehou moet word, byvoorbeeld vir die jong man wat pas sy studies voltooi het, is selfs die aanvangsalaris plus die duurtetoelaag nie so skamel nie. Hierdie inkomste is 'n netto wins, sonder slegte skulde of enige koste (behalwe die nagmerrie van inkomstebelasting alleen!) Elke jaar is hy op 38 dae vakansieverlof met volle betaling geregtig. Word hy siek (en selfs geneeshere kan siek word) kan hy dit so reël om gedurende elke tydperk van 3 jaar, 4 maande siek te word en volle salaris te ontvang en vir die daaropvolgende verdere 4 maande siekteverlof die helfte van sy salaris. Veral vir die jong geneesheer is die ondervinding wat hy so opdoen van onskatbare waarde. Hierdie ondervinding stel hom in staat om tot die hoogste sporte in die Staatsdiens te klim en natuurlik met 'n aansienlike verhoging in salaris.

Mental Hospitals. One of the problems facing us today, and which causes me much anxiety, is the insufficient accommodation for our mental patients. As in any other branch of medicine, mental diseases also require early diagnosis and treatment for speedy recovery. It is, however, very important that this treatment should, in most cases, be given in institutions by experts. On account of the heavy financial demands upon the Government it has unfortunately not yet been possible to provide fully for the requirements of these patients, but I can give you the assurance that I and my colleagues in the Cabinet are not indifferent to this serious question and, as soon as the difficulties in the way can be surmounted, active steps will be taken to tackle and overcome this problem.

Tuberculosis. Although there will always be problems in the medical field, it is particularly pleasing that they are overcome one after the other. I have in mind specially the progress which has been made during the last few years in the fight against tuberculosis. Perhaps the most significant aspect of this progress is the fact that so many of the tuberculotics can today be treated at home and, moreover, that many of them can even do some work during their treatment. Fortunately, my Department today disposes of more funds for the purpose of providing home treatment for these patients. This policy of home treatment wherever possible has many advantages, because not only are many beds in tuberculosis hospitals and the accompanying costs saved, but the psychological advantages for the patient are extremely important. He realizes that he will not for the rest of his life be a burden for his family, society and the State, but that, within a measurable space of time, he will again be a useful citizen and be able to pull his weight in society.

In this connection I would like to appeal to the previous employers of such patients for their wholehearted cooperation. No patient is allowed to resume work as long as he has the disease in an infectious form. It can be appreciated, however, that he will have to perform reasonably light work until his strength has been completely restored. It is here that employers can do so much to consolidate the success which has been achieved. By re-employing these people, and observing the medical directions regarding the patient's capabilities of work, they will render a great service, not only to the person concerned, but to the whole country. I trust that we can depend on this cooperation.

Kanker. Laat die sukses wat met die behandeling van tuberkulose behaal is vir u 'n aansporing wees om die ander groot gevaar wat die wêreld bedreig, kanker, die hoof te bied. Hoewel daar vandag intensiewe navorsing in hierdie land en ander lande op die gebied van kankerbestryding gedoen word, bly op hierdie stadium die doeltreffendste wapen nog maar die vroeë ontdekking en behandeling van die siekte. Om dié rede wil ek dit hier beklemtoon hoe belangrik dit is om nie net altyd op u hoede vir hierdie siekte te wees nie, maar om ook gedurig u pasiënte op die begintekens van die siekte te wys en hulle aan te moedig om wanneer enige abnormale teken hom voordoen, onmiddellik mediese advies in te win. Deur hierdie propaganda op 'n taktvolle manier te maak, kan u baie doen om lyding te versag, en menige lewe van 'n gewisse dood te red.

Gewoontevormende en Potensieël Gevaarlike Middels. Ek sou my plig as Minister van Gesondheid versuim as ek u nie op 'n dreigende gevaar wys nie—'n gevaar wat onteenseglik reeds ernstige afmetings in Suid-Afrika aangeneem het, nl. die misbruik van gewoontevormende en potensieël gevaarlike middels. Dit was vir my ongelooflik om te verneem dat, in verhouding tot die bevolking, meer van hierdie middels in Suid-Afrika as in enige ander Westerse land gebruik word. Dit is 'n skokkende maar onteenseglike waarheid. Ten spyte van die feit dat bestaande wetgewing daarop gemik is om die verkry van hierdie middels deur gewone persone uit te skakel, skyn dit asof wetgewing nie voldoende is om die euwel te bestry nie. Daar hierdie middels veronderstel is om slegs op voorskrif van 'n geneesheer, tandarts of veearts uitgereik te word, wil ek 'n beroep doen op diegene wat met die onderrig van die mediese studente betrokke is om nog meer as in die verlede die studente teen die gevare van die middels te waarsku, en die vereistes van die wet aan hulle te verduidelik en te beklemtoon. Mag ek toegelaat word om die mediese professie in geheel, in alle erns, te maan om uiters versigtig te wees met die voorskrywing en toediening van hierdie middels. Waar gevalle van misbruik onder die aandag van my Departement kom, word onmiddellik ondersoek ingestel en, indien dit blyk dat die bewerings gegrond is, word daar nie geaarsel om streng op te tree nie. Wie ken beter as u, in wie die publiek sy vertroue stel, die gevaar van hierdie middels, en hoeveel ellende dit kan veroorsaak?

Poliomyelitis. I feel it will be expected of me to say just a few words in regard to poliomyelitis, and the steps that have been taken in this country in regard to counteracting this dread disease.

In the first place, I would like to emphasize that there has been, and will continue to be, international consultation and cooperation between the scientists in the various countries, including South Africa, in regard to the steps which have been taken. There are not only no secrets, but the fullest disclosures of everything that was happening were made to and by us, and this will continue. Because of this exchange of information and data, our team of scientists in this country were able, not only to acquire all possible information, but I am proud to say, were able to contribute very valuable data and knowledge to others. I was very pleased to learn, that the world renowned polio expert, Dr. Koprovsky, who visited our country, expressed the opinion that our Polio Foundation was one of the most outstanding and best equipped in the world for polio research.

As a stage had been reached, when consideration had to be given to the possible use of the preventive vaccine which had been produced, and as the issue was of such a vital nature, I referred this question to a special Committee of experts in South Africa, for a thorough examination and report, with special reference to the possible use of the vaccine prepared in the Foundation's laboratory. After numerous meetings and consultations, and careful study of all aspects, this Committee of experts unanimously advised me that the South African vaccine had been proved safe beyond all reasonable doubt and was probably efficacious.

I therefore authorized the use of the vaccine on such children, according to age-groups, etc., as the Committee recommended, and whose parents voluntarily applied for it. I am informed that there has been no adverse reaction whatsoever in any of the children who were vaccinated. I consider this most satisfactory and encouraging.

As Minister of Health I wish to express the appreciation and thanks of the whole country to Dr. Gear and his team of assistants, and I feel they also deserve the appreciation of the whole medical profession for what they have achieved. Special thanks are also due to the band of experts who voluntarily sacrificed their time and labour to make the necessary investigations which enabled me to come to a decision in regard to the use of the vaccine. The public of South Africa, who contributed so generously towards the establishment of the Polio Foundation Research Laboratory, can feel very happy in the thought that their money was so well invested and produced such excellent results.

Importation of Foreign Practitioners. In conclusion there is one other matter to which I wish to refer. Reports in the daily Press of my request to the South African Medical and Dental Council to amend an existing regulation which will allow the Government to recruit some medical practitioners from European

countries, have caused some confusion. With the phenomenal development of the country's health and hospital services since the war, many additional posts have been created by the Central Government, Provincial Administrations and local authorities. Unfortunately many of the posts in the public service, for which a medical degree is required, have remained unfilled.

Hospitals for the mentally defective, tuberculosis services, medico-legal and public-health laboratories, are only some of the services which still demand urgent expansion. This is impossible because little or no response is obtained to advertisements for the filling of the junior posts with commencing salaries of £1,020—60—£1,200 for newly qualified practitioners, and £1,380 for docters with a few years experience, though these posts carry, in addition, a cost-of-living allowance of £234 per annum for married men, as well as liberal leave and study-leave privileges.

In order to tide us over the present emergency, it is my intention to fill a certain number of these vacancies on a contractual basis. It is hoped that there will be a response from those doctors who do not look to the Public Service as a permanent career and the eventual security of a pension, but who wish to use the Service as a stepping stone, or to end their professional careers. These posts will be advertised in the Union, and only essential posts which cannot be filled by citizens of this country will be advertised overseas. There will be no question of appointing anyone, even on this contractual basis, who is not in possession of a professional qualification acceptable to the Medical Council.

Laat dit die strewe van elke medikus wees om die eer, tradisie en standaard van sy professie hoog te hou.

Met die volste vertroue dat die verrigtinge besonder geslaagd sal wees, verklaar ek die Kongres geopen.

I now declare the Conference officially open.

DR. J. WOLF RABKIN'S RETIREMENT FROM HONORARY VISITING STAFF OF WOODSTOCK HOSPITAL

A very pleasant function in honour of Dr. J. Wolf Rabkin, who has retired from the Honorary visiting staff of the Woodstock Hospital, took place at Woodstock Hospital on Thursday, 22 September 1955.

Dr. J. Wolf Rabkin

Dr. Ruby Sharp presided over a very fine gathering of the Nursing and Medical Staff of the Hospital. In welcoming those present, Dr. Sharp said the large attendance spoke volumes for the respect and honour in which Dr. Rabkin was held. He had always been a pillar of strength in the Hospital and his great work would be an example difficult to emulate by those who succeed him.

Dr. Lane Forsyth spoke of his close association with Dr. Rabkin in the work of the hospital. He said that Dr. Rabkin, like his predecessor the late Dr. D. Dunn, made a niche for himself in the history of Paediatrics in this country. His work in Paediatrics at the Woodstock Hospital was magnificent and thousands of children of all races, creeds and colour had benefited from his expert advice and care. Dr. Forsyth wished Dr. Rabkin health and happiness in his retirement from hospital work.

Dr. A. S. Gans paid tribute to Dr. Rabkin, not only as a doctor, but primarily as a man. Both in his personal and professional capacity, his association with Dr. Rabkin had always been stimulating, most pleasant and ever cordial. He admired Dr. Rabkin as a great humanitarian and beneath his characteristic, strong personality, there was a heart of gold. It was indeed a great pity that owing to his having reached the age limit for retirement, the hospital would be deprived of such a great and noble paediatrician.

Dr. Hamilton Bell spoke very highly of Dr. Rabkin's services to child health generally, and the Paediatric Department of Woodstock Hospital in particular. He always admired his forceful personality and his irrestible and successful attempts to improve the standard of Paediatrics in the hospital. Dr. Bell thanked Dr. Rabkin for a truly great contribution to the magnificent reputation of the Woodstock Hospital and wished him well in his retirement.

Dr. Lorn Shore stressed that though Dr. Rabkin was retiring from active hospital practice, he remained a vital force in paediatrics. He spoke of the manner in which Dr. Rabkin had developed and enhanced the excellent reputation of Buxton Ward, and of his enthusiasm for teaching. What he admired most was the painstaking way in which Dr. Rabkin assured 'a square deal for every child in hospital'. He prophesied that Dr. Rabkin would always receive a warm and friendly welcome in Woodstock Hospital.

Dr. Falconer, Medical Superintendent, also spoke highly of Dr. Rabkin's work in this hospital and extended a cordial invitation to him to visit the hospital whenever he so wished. He would always be most welcome.

Miss Mansfield, Matron of the hospital, expressed the appreciation of the Nursing Staff to Dr. Rabkin for all the wonderful interest he had always shown in the welfare of the nurses. Relationship between Dr. Rabkin and his nursing staff had always been on the very highest level of cordiality. On behalf of the nursing and medical staff, of the hospital, the Matron presented Dr. Rabkin with a suitably inscribed presentation gift.

DR. RABKIN'S REPLY

Dr. Rabkin in his reply thanked the speakers for all the true sentiments expressed and for the lovely presentation. He recalled that his first acquaintance with the Woodstock Hospital was 31 years ago. He was impressed with the late Dr. C. Resnekov's ability and skill, and he was overwhelmed by the late Dr. Robert Sharp's intellect, firmness, knowledge and quiet dignity. He paid tribute to the memory of the late Dr. Dowie Dunn, whose knowledge, effort and kindliness put the Buxton Ward on the paediatric map. In this Dr. Dowie Dunn had the untiring help of the late Sister Scharges. The standard they set, he humbly tried to follow.

He wanted to recall, with reverence, the late Dr. Stevens, whose mild manner and quiet watchfulness as an anaesthetist impressed him in his boistrous youth.

Dr. Rabkin continued 'but men come and tarry but awhile, for life—active, vigorous, pleasant hospital life, goes swiftly by. Those on the staff of a hospital appreciate how full a portion is the time spent within the hospital family circle. You walk away each day with the feeling of absolute security, knowing full well that your patient is in the hands of trained people for whom life's vocation is human service.

'To-night I am retiring from this compact, unique and beloved hospital, with its warmth and its human atmosphere. This hospital, apparently quiet and tucked away in a side street, is a beehive of activity. Here no doctor or nurse is ever idle, yet homeliness permeates the atmosphere.

'Personally I have always had a square deal from my colleagues and from the nursing staff, and I cannot recall a single instance where any orders were not carried out in letter and in spirit. It could not have been otherwise under the guidance, skill and enthusiasm of Sister Ward. Her instructions for the guidance of the nursing staff were clear and precise, and her example inspired every nurse and every sister who came to do her work.

'There is only one serious difficulty I had with Buxton Ward: I could not push out those walls, and thus, requests for admission became a clamour—an insistent demand, and what could the poor Matron do? She had to think of her staff, who I am happy to say, were willing to endure much, but Matron had to guard

their health as a mother, and for that she deserves infinite praise. I feel that, in her quiet way, our new Matron Miss Mansfield will be just as ready to defend her flock.

'The whole staff were helpful in establishing a special Paediatric Consulting Out-Patient Department. Dr. Shore widened the sphere, enlarged and improved the department. This division of labour amongst the visiting staff gives us all more time for reading and reflection. The advance of modern medicine is widespread and rapid. This is a scientific age. If we do not keep pace with science, we are soon left behind, and experience only remains our guide—which is not enough. It is unfair to the children and to the parents who place them in our trust. Mere longevity is valueless without a scientific background. Science marches on. The doctor of yesterday cannot compete with the doctor of to-morrow, unless he familiarises himself with the almost daily deluge of fresh medical thought. Each decade establishes new facts and demands new methods of approach.

'To you the nursing staff, I can say with equal truth that I owe you a debt of deep gratitude for looking after my sick children, and many I have admitted most desperately ill. No child, in my opinion, is ever effectively treated without the wholehearted co-operation of the nursing staff. This help the sisters and nurses have given me in full measure. I can say, with due modesty, that a child in Buxton Ward gets a square deal. He gets astute observation from the sister and her associates, and clinical observation and management from the general practitioner in charge, the resident and the Paediatric Department.

I have, therefore, great pleasure in dedicating to you and my colleagues, the Paediatric Department with the assurance, that scientific Paediatrics will be its basis, that good nursing will be its helpmate and that both doctors and patients will benefit from this atmosphere of co-operative human endeavour and sound scientific medical practice.

PASSING EVENTS : IN DIE VERBYGAAN

Union Department of Health Bulletin. Report for the 7 days ended 13 October 1955.

Plague, Smallpox, Typhus Fever: Nil.

Epidemic Diseases in Other Countries.

Plague: Nil.

Cholera in Calcutta (India).

Smallpox in Rangoon (Burma); Phnom-Penh (Cambodia); Kozhikode, Tellicherry (India); Dacca, Lahore (Pakistan); Dar es Salaam (Tanganyika).

Typhus Fever: Nil.

* * *

Cape Town Paediatric Group. The next meeting of the above group will be held on Tuesday, 1 November 1955, at 8.15 p.m. in the E-floor Lecture Theatre, Groote Schuur Hospital. The speaker for the evening will be G. A. Pollock, Esq., F.R.C.S. of Edinburgh who is visiting this country and who is particularly interested in the problem of cerebral palsy. The title of his address will be *The Spastic Child.* Members of the Orthopaedic, Surgery, Neurological, Physicians, Physical Medicine and other groups interested in this subject are cordially invited to attend this meeting.

Mr. G. A. Pollock, the internationally recognized expert on Cerebral Palsy who is in charge of the Westerlea School for Cerebral Palsy in Edinburgh, has come to South Africa to help with the Cerebral Palsy movement here. He took part in a Symposium on Cerebral Palsy at the Medical Congress in Pretoria, delivered an address and showed some films of his work. While in South Africa he will spend some time at the Cerebral Palsy Schools in Pretoria, Johannesburg and Cape Town. He will also probably visit Durban. He will lecture to the Orthopaedic and Paediatric Groups in Johannesburg on 4 November 1955 and other lectures are being arranged for him in Pretoria and Cape Town.

* * *

Research Forum of Groote Schuur Hospital, Faculty of Medicine, University of Cape Town. The next meeting of the Research Forum will be held in the large A-floor Lecture Theatre, Groote Schuur Hospital, Cape Town, on Wednesday, 2 November at 12 noon. Drs. C. Merskey and J. Hansen will read a paper on *Thrombocytopenia, Prothrombin and Factor 7 Deficiency in Kwashiorkor.*

DR. C. H. H. COETZEE'S RETIREMENT AFTER 31 YEARS SERVICE AS R.M.O.

On the occasion of his retirement after 31 years service as Railway Medical Officer and 7 years as Anaesthetist, Dr. C. H. H. Coetzee in an address to the Eastern Transvaal System Board said:

It is indeed a sad moment for me to-day to take leave of you. I have been with you as group representative ever since 1938 with, I think, only two short breaks of a year each. During this period of 17 years I have got on excellently with each board. It was nevertheless sometimes very difficult to make the members see things from the RMO's point of view and *vice versa.* Anyway our differences never came to open warfare.

I think this Eastern Transvaal Board is to be congratulated on the mutual co-operation between RMO's and board. There have been many changes of chairman, and almost every one of them remarked on the peaceful conditions here, as compared with most other systems, where complaints were much more numerous.

Human nature being what it is, the same incidents occur between private patients and their doctors as between the railwayman and his RMO—though perhaps to a lesser extent. But the private patient can go somewhere else, or his doctor can tell him to do so when he is too troublesome; this is impossible with us. This trouble I hope will be partially solved by the Zwarts Scheme. The main cause of discontent, however, is to my mind a psychological one—the inevitable inferiority complex of all sick fund and medical benefit society members.

This condition is less evident in Pretoria than elsewhere because it is normal here to belong to some medical aid society, benefit society or sick fund. There are many more of such patients in Pretoria than private patients. Of all the dozens of medical societies and funds here there is not one better than the S.A.R. & H. Sick Fund from the members' point of view. I am so convinced of this that some 10 years ago I drew up a comprehensive scheme for the whole Union based mainly on the S.A.R. & H. Sick Fund. I was nearly shot by my colleagues for doing so! Nevertheless I am still convinced that with the ever-rising cost of medical services and drugs my scheme will have to be accepted some time or other in the not very distant future.

Dr. van Biljon, who has just returned from Europe and the British Isles, has looked into most of the railway schemes there, and can tell you how these old countries have solved their railway sick problems. I strongly advise you to ask him to address you on the subject.

Talking about complaints against RMO's I think I can claim a record—only two during a continuous service of 38 years. One was in my old practice at Edenburg, and one here. At Edenburg I was accused of scalding a member's wife during her confinement. The douche water had to be very hot in order to stop dangerous bleeding—it did not scald my hands—neither was scalding reported from the hospital later. I saved the patient's life by hot douching and plugging, and the husband, at the time, was most appreciative. A month later I received a letter of complaint via the Sick Fund wherein the member accused me of scalding his wife.

Late one night having just returned from a distant visit I found a message at home to return to the same neighbourhood immediately—just after 11 p.m. I went back immediately, and found my patient to be a pretty young woman complaining of a ‚Snaakse gevoel hier onderkant die nael'. After examination I told her that she was 5 months pregnant. ‚Nee dokter ons is maar net vier maande getroud' she retorted. I repeated my examination

with the tactless remark, ‚Jammer mevrou, die grote is die van 'n vyf maande swangerskap'. By this time the husband had entered. ‚Jy kan nie so sê nie', He shouted. ‚Ek sal jou net môre report aan die Siek Fons'.

I was hauled before the board—the members looked daggers at me—but I stood my ground, maintaining that it was my duty to ask this question to come to a proper diagnosis—there might be twins, or triplets, or a tumour or hydramnios.

Mr chairman, coming to the end of my tether—or rather to the terminus of my railway line—I must thank the board for having so kindly extended my services for the full 5 years after 60. I had hoped I would have been honoured by having my services extended a few months further, but it is no use crying over spilt milk. I had hoped that the outspoken promise of my old friend Mr. Heckrood, as chairman of the central board in 1948, that the specialists would get the same rise as the RMO's (now near 100% with extras) would have been acted upon long ago. At long last, I hear, this is about to be done, but alas, too late for me to benefit fully.

I had repeatedly proved, up to the hilt, that all the old specialities were being paid less and less for more and more work as compared with 1930—in spite of the depreciation of the pound. By 1950 the surgeon's operations had gone up by 14% in spite of relief in gynaecology and orthopaedics, and his consultations had increased by 420%—by now the per unit increases are considerably more, but I haven't got the figures. The ENT specialist operations had increased by 312% per unit, and his consultations by 780%. In 1932 anaesthetics amounted to 100 per 1,000 members. In 1952 it was 160 per 1,000 and now it is no less than 190 per thousand members. But 'none so blind as those that will not see, and none so deaf as those that will not hear'.

On behalf of the old specialists who still remain, and have some years still ahead of them, I can only thank the Sick Fund, and especially the Investigation Committee, for at last having seen heard and believed how inadequate our pay was. I am sure that, with specialists' pay up to the standard of the RMO's, the whole Sick Fund will go ahead as one happy family. With that sincere wish and belief I say goodbye to you.

CORRESPONDENCE : BRIEWERUBRIEK

A CONSULTANTS' REGISTER

To the Editor: The lament of Dr. Theron over conditions in our profession to-day is understandable and I agree with much of what he says.

When we consider in detail the state of chaos to which he refers one readily finds that the cause of it is the same as that of all forms of chaos namely dictatorship. For some years now we have had the dictatorship of the S.A.Medical Council, and whoever fathered that body is responsible for the troubles we have to-day. Too apathetic to run our own affairs we have permitted a body of people, consisting of a farmer, some nurses, dentists, a large number of full-time officials of various organizations plus a sprinkling of privately practising men, to control us.

Comparison with conditions in England does not apply because what exists there is no longer a profession but a civil service health department caring for the sick of the nation. We see the thin end of the wedge here too when in the same issue of our *Journal* containing Dr. Theron's letter there appears an advertisement for a post in a hospital supported by public funds. It states that applicants must be registered for at least three years. This is evidence of the notorious civil service philosophy of seniority rather than merit.

No, we are surely over-governed and the only way in which we can get back to common sense and retrieve our dignity would be to abolish the Medical Council and to organise the control of our profession in the following way:

1. Compulsory membership of the Association.

2. Federal Council elected democratically from candidates who have declared their policy in the *Journal*.

3. Executive Committee of Federal Council registers all doctors on an equal basis. Each doctor has to put his qualifications and subject on his door and has to limit his practice to that only. Breach of this will be a serious offence except in emergency. (The general outcry is that the public must have free choice of expert knowledge. They will now have their chance to choose freely and the doctor who knows his stuff will have nothing to worry about. The doctors themselves who need help will always know where to find expert help. It is not conceivable that a person trained in psychiatry will put himself out, for example, as a plastic surgeon.)

4. Branch Committees will deal with local minor ethical matters such as fees etc. Major matters to go to Federal Executive Committee to which appeals may also be made.

A detailed constitution will of course, have to be worked out.

As we are going on now we can only become more laughable in the eyes of the public.

Libertè

14 October 1955

TOXAEMIA OF PREGNANCY

To the Editor: Toxaemia of pregnancy and all that goes with it, from the mildest case to the severest of severe fulminating eclampsia is a subject or a number of subjects in which I have had a very special interest for many years. I feel confident that a great deal more original work could be done on this subject if only those interested would get away from a 'rut' in thinking and working on this important subject.

To cut a very long story short, I would like to state that as a result of observations I have made on trace-element deficiencies in plant and animal life, I regard the so-called toxaemia of pregnancy as a condition brought about by deficiencies of trace elements in the food intake of some pregnant women before and during pregnancy. I cannot now elaborate on this subject but I hope to do so in the course of the not too distant future.

I am appealing to you to give some publicity to this important subject by assisting me to get as much information as possible from any of your many interested readers in South Africa or beyond our borders—medical specialists, public-health experts, family doctors, biochemists, physiologists, and of course specialist gynaecologists and obstetricians. Is toxaemia of pregnancy commoner in certain areas? Is it commoner at certain times of the year? Is eclampsia generally speaking a milder and less killing disease in some localities than in others?

I have read all the reviews of articles written in different countries of recent years, and, while I have personal views on this subject I find so much that is conflicting that I would at least like to know what most of the 7,000 medical men in South Africa who have any experience of or any views on this subject think about the matter.

If my friend Dr. Connan of Bloemfontein, would set the example and send me the combined experiences of himself and his colleagues in the centre city, and if interested doctors in Kimberley, Kroonstad, Potchefstroom, Maseru, Aliwal North, Beaufort West, as an inner circle, will do the same, I am sure the outer circle—Port Elizabeth, East London, Durban, Johannesburg, Pretoria, Vryburg, Windhoek, Port Nolloth and Cape Town will complete the Union-wide survey.

I shall get a very good idea of regional and seasonal incidences of the state I am busy working on. What it will all add up to will be of interest to us all.

Dr. Fox of the S.A.I.M.R. who wrote such an interesting series of articles on the agricultural foundations of nutrition in your *Journal* might be able to help me a lot.

My long letter will probably convey to you and your many readers what I am after.

D. P. de Villiers

Room 803
Groote Kerk Buildings
Adderley Street
Cape Town
4 October 1955